

GAO

Report to the Chairman and Ranking  
Minority Member, Subcommittee on  
Military Personnel, Committee on  
Armed Services, House of  
Representatives

June 2001

# MILITARY PERSONNEL

## Perceptions of Retention-Critical Personnel Are Similar to Those of Other Enlisted Personnel



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United States General Accounting Office  
Washington, DC 20548

June 28, 2001

The Honorable John M. McHugh  
Chairman  
The Honorable Vic Snyder  
Ranking Minority Member  
Subcommittee on Military Personnel  
Committee on Armed Services  
House of Representatives

Widespread reports of flagging military morale raise an important question: is dissatisfaction with the military way of life driving highly trained individuals out, or are they being lured away by more favorable civilian opportunities? In recent years, the Department of Defense (DOD) has become increasingly concerned about its ability to retain enough personnel to fulfill its missions and is particularly concerned about retaining personnel who possess specialized skills. Human capital management is not only a problem for DOD, but as we have reported, it is also an area of concern throughout the federal government today.<sup>1</sup> Overall, the military reports that it is meeting its aggregate retention goals, but DOD leaders remain concerned that they are significantly challenged in their efforts to compete with the private sector for individuals with specialized skills.

In response to your request, we analyzed the results of DOD's 1999 broad-based survey of active duty personnel<sup>2</sup> to help shed light on why servicemembers in critical occupational areas might be leaving the military. We helped the Department design this survey and previously testified before the Subcommittee on the results of our preliminary analysis.<sup>3</sup> This analysis revealed that more military personnel are satisfied than dissatisfied with the military way of life. Following our testimony, the Subcommittee asked us to use the final survey data to more closely

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<sup>1</sup> *Major Management Challenges and Program Risks: Department of Defense* (GAO-01-244, Jan. 2001) and *Human Capital: Managing Human Capital in the 21st Century* (GAO/T-GGD-00-77).

<sup>2</sup> *1999 Survey of Active Duty Personnel: Administration, Datasets, and Codebook* (Defense Manpower Data Center, Arlington VA, December 2000).

<sup>3</sup> *Military Personnel: Preliminary Results of DOD's 1999 Survey of Active Duty Members* (GAO/T-NSIAD-00-110, Mar. 8, 2000).

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examine the responses of personnel serving in retention-critical occupations and compare them to those of other enlisted personnel. We focused our analysis on three areas: (1) what were the expectations and experiences of enlisted personnel, (2) how satisfied were they with military life and what were their career intentions, and (3) what were their perceptions of civilian work opportunities and quality of life. We defined a difference to be both significant and meaningful if the responses of retention-critical personnel and other enlisted personnel differed by  $\pm 7$  percentage points.

To address these objectives, we worked closely with each of the four services to determine what occupations they consider "retention-critical" because of their impact on readiness. Identifying occupations that are retention-critical proved difficult because each service defines the term differently. Ultimately, they identified 64 occupations that were of concern. We grouped the occupations into three broad occupational areas—electronic equipment repairers, communications and intelligence specialists, and electrical and mechanical equipment repairers. These broad areas include specific jobs like sonar equipment repairers, radio and radar repairers, air traffic controllers, and aircraft and automotive mechanics. Combined, the services employ about 300,000 retention-critical enlisted personnel in these three broad areas. This represents about 29 percent of the entire enlisted force. We compared the perceptions of the personnel in these retention-critical occupations to those of other enlisted personnel.<sup>4</sup> Details on our objectives, scope, and methodology are in Appendix I.

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## Results in Brief

We conclude from our analysis, comparing the responses of retention-critical personnel against other enlisted personnel, that personnel in retention-critical occupations are not being "pushed out" of the military by their experiences at a greater rate than other enlisted personnel. Rather, to the extent they possess marketable skills, it is more likely they are being "pulled out" of the military by more attractive civilian opportunities.

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<sup>4</sup> Throughout this report, we use specific terms to describe the enlisted populations we analyzed. Use of the terms "all" or "entire" enlisted personnel refer to analysis of the entire enlisted force, including those in retention-critical occupations. The term "retention-critical personnel" refers to only those servicemembers that were identified by the services as being "retention-critical." Use of the term "other enlisted personnel" refers to all enlisted personnel minus personnel from the retention-critical occupational area we are discussing. The 1999 Active Duty Survey results were projected to each of these groups and are representative of those populations.

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Comparing retention-critical personnel against other enlisted personnel, we observed that the expectations and experiences of personnel serving in retention-critical occupations were, in general, similar to those of other enlisted personnel. Nearly three-quarters of retention-critical personnel, as well as all other enlisted personnel, indicated that military life was either better than or about what they had expected before they joined. However, we found some pockets of differences within the retention-critical occupational areas in comparison to other enlisted personnel regarding their experiences in the military. For example, compared to other enlisted personnel, those serving in electrical and mechanical equipment repair occupations—one of the retention-critical occupational areas—raised more concerns about their unit's preparedness with regard to staffing, and spare parts and equipment problems. The experiences of personnel in the other two retention-critical occupation areas were not significantly different from those of other enlisted personnel with regard to their unit's preparedness.

Personnel in retention-critical occupations were generally as satisfied with military life as were other enlisted personnel and each group's career intentions were similar. Nearly half of both retention-critical and other enlisted personnel were satisfied with the military way of life. About one-third were dissatisfied. Likewise, at the time they responded to the survey, roughly half of both retention-critical and other enlisted personnel planned to stay in the military for 20 or more years. When asked to recall what their career intentions were before they entered the military, around 50 percent of both retention-critical and other enlisted personnel recalled being unsure about whether or not they would make the military a career.

Perceptions of civilian life for those serving in retention-critical occupations were mixed. Overall, most enlisted personnel had a positive perception about work-related opportunities and the quality of life available in the civilian world. Those in retention-critical occupations that had highly marketable skills, such as electronics equipment repairers were especially optimistic about their opportunities for civilian employment. According to officials from the Bureau of Labor Statistics, this belief is difficult to quantify but is probably accurate. DOD affirmed these conclusions in a recent report that cited a robust economy and keen civilian sector competition for employees to fill high-technology positions as some of the causes for DOD's human resources challenges.<sup>5</sup> This report

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<sup>5</sup> *The Defense Science Board Task Force on Human Resources Strategy*, February 2000.

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cited evidence that the quality and capability of the force was beginning to erode from record highs in the mid-1990s. For example, the report noted that, while the overall quality of recruits remained well above the minimum standards, a decline in quality was evident and needed to be reversed, particularly in a number of unidentified critical skill specialties.

We are not making any recommendations in this report.

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## Background

During the early and mid-1990s, when the military reduced personnel levels, retention was not a primary concern. However, DOD and Congress have long recognized that some servicemembers, particularly those in certain technical areas, can be difficult to retain.<sup>6</sup> In 1998, DOD raised concerns about retention overall and about the quality and readiness of its forces. In testimony before the Senate Armed Services Committee in September 1998, the members of the Joint Chiefs of Staff testified that retention rates had declined force-wide and within specific critical occupations. In response to these concerns, Congress increased military pay across-the-board and repealed legislation that lowered retirement benefits for some military personnel.<sup>7</sup> In the last quarter of fiscal year 2000, the services reported they were generally successful in retaining more personnel at the aggregate level but were still concerned about readiness in selected critical skill areas.<sup>8</sup>

To determine which occupations were of greatest concern, we asked DOD and each of the services to identify and prioritize occupations they deemed retention-critical due to their impact on force readiness. In response, the services identified 64 service-specific occupations as retention-critical. To make comparisons between the different service occupations possible, we used DOD's occupational coding scheme to organize each of the service occupations into broader occupational groupings.<sup>9</sup> For example, each of the services identified radio and radar

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<sup>6</sup> *Military Personnel: Systematic Analyses Needed to Monitor Retention in Key Careers and Occupations* (GAO/NSIAD-00-60, Mar. 8, 2000).

<sup>7</sup> National Defense Authorization Act for Fiscal Year 2000, title VI, P.L. 106-65.

<sup>8</sup> *DOD Quarterly Readiness Report to the Congress*, July–September 2000.

<sup>9</sup> DOD's Occupational Conversion Index organizes service specific occupations into similar occupational groupings, making it possible to compare these occupations across all the services. Enlisted occupations are divided into 10 occupational areas, and 69 occupational groups. Our analysis was conducted primarily at the occupational area level.

repair personnel as a retention-critical occupation. Using DOD's occupational coding scheme, radio and radar repairers fall within the electronic equipment repair occupational area. All of our analyses were conducted at this occupational area level. By organizing the service occupations into their respective groups and ultimately into occupational areas, we were able to consolidate the services' list of 64 retention-critical occupations into 16 occupational groups and then further into three occupational areas (see table 1).

**Table 1: Retention-Critical Occupations Identified by DOD and the Services, Organized by Occupational Area and Occupational Group**

Occupational area	Occupational group
Electronic equipment repairers	<ul style="list-style-type: none"> <li>• Radio/radar repairers</li> <li>• Fire control electronic systems (nonmissile) personnel</li> <li>• Missile guidance, control and checkout personnel</li> <li>• Sonar equipment repairers</li> <li>• Other electronic equipment repairers</li> </ul>
Communications and intelligence specialists	<ul style="list-style-type: none"> <li>• Radio and radio code operators</li> <li>• Sonar operators</li> <li>• Radar and air traffic controllers</li> <li>• Signal intelligence/electronic warfare personnel</li> <li>• Intelligence personnel</li> <li>• Combat operations controllers</li> </ul>
Electrical and mechanical equipment repairers	<ul style="list-style-type: none"> <li>• Aircraft and aircraft related repairers</li> <li>• Automotive repairers</li> <li>• Wire communications repairers</li> <li>• Power generating equipment repairers</li> <li>• Precision equipment repairers</li> </ul>

Source: DOD Occupational Conversion Index.

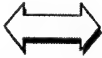
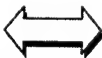





In a November 2000 report to Congress, DOD acknowledged that the services had shortages in some critical skill areas.<sup>10</sup> Although concerned, DOD indicated it was working with each service to prioritize the use of available personnel and planned to continue focusing on pockets of retention problems within critical skill areas. DOD officials attribute retention problems in certain occupations to factors such as the growth of civilian job opportunities, the negative impact of increasing military operations, and servicemembers' concerns over benefits and quality-of-life conditions.

<sup>10</sup> DOD *Monthly Readiness Report to the Congress*, November 2000.

Expectations and Experiences of Retention-Critical Personnel Were Similar to Other Enlisted Personnel

The expectations and experiences of personnel serving in retention-critical occupations were similar to those of other enlisted personnel (see fig. 1). We examined data from DOD's 1999 Active Duty Survey, which asked respondents to recall their expectations upon entry and how their experiences met these expectations.

Figure 1: Expectations Upon Entry of Personnel

Occupational area	Career intentions upon entry – Leave at end of obligation	Military life has been worse than expected
All enlisted personnel	26 percent	28 percent
Electronic equipment repairers		
Communications and intelligence specialists		
Electrical/mechanical equipment repairers		
 Responses were similar to those of other enlisted personnel		

Source: DOD's 1999 Survey of Active Duty Personnel.

Expectations of Military Life Upon Entry

Most enlisted personnel did not intend to make the military a career when they joined. Nearly half (47 percent) were unsure of their career intentions when they first joined the military. About one-quarter (26 percent) indicated they had planned to leave at the end of their initial obligation. Another one-quarter (27 percent) planned to remain in the military until retirement. Those serving in retention-critical occupations reported similar career expectations when they first joined the military. Historically, the services have reported having a difficult time keeping personnel beyond their first term of enlistment. Although 27 percent reported wanting to stay for at least a 20 years, the DOD Actuary has found that only about 16 percent of the enlisted force actually do stay that long.

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## Experiences in Relation to Expectations

In responding to survey questions about whether military life was better or worse than expected when they first joined, more than 70 percent of all enlisted personnel indicated military life was better than they expected or about what they expected when they first joined. Conversely, nearly 30 percent of all enlisted personnel, including those in retention-critical occupations, indicated that life in the military was worse than they expected when they first joined. Again, the responses of those in retention-critical occupations were similar to those of other enlisted personnel.

To compare personnel in retention-critical occupations to other enlisted personnel, we developed profiles using survey questions from DOD's 1999 Survey of Active Duty Personnel. These profiles made it possible to compare the responses of retention-critical personnel in each occupational area against those of other enlisted personnel. By doing these comparisons, we could identify differences in the expectations and experiences between enlisted personnel serving in retention-critical occupations and other enlisted personnel. To measure expectations, we analyzed survey questions regarding what enlisted servicemembers' recalled their career intentions were when they first entered the military. We also analyzed their responses to survey questions about whether military life had met the expectations they had when they first entered military service. Figure 1 shows no significant differences between personnel serving in retention-critical occupations and other enlisted personnel regarding their career intent and their expectations for what military life would be like when they first entered the military. We defined a significant and meaningful difference to exist between the responses of retention-critical personnel and other enlisted personnel if their responses differed by  $\pm 7$  percentage points.

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














## Experiences Were Mixed

The experiences of retention-critical personnel varied somewhat by occupational area, but overall, they were generally similar to the experiences of other enlisted personnel. To measure enlisted servicemembers' experiences, we analyzed their responses to DOD survey questions about issues that reflect some of the top concerns that have been raised by servicemembers and service leadership in recent years. The survey asked (1) how many hours servicemembers reported working during their last full workweek, (2) how much they had been deployed during the previous 12-month period, (3) how well their units were staffed, and (4) how well their units were equipped. These issues were cited in a recent report to Congress as exacerbating retention problems within certain critical occupations. Our analysis of the survey data revealed that although some areas of concern exist within one retention-critical



occupational area, these concerns are not as serious in the other two retention-critical occupational areas. For instance, more personnel serving in electrical and mechanical equipment repair occupations reported staffing and parts and equipment concerns compared to other enlisted personnel (see fig. 2), but the concerns of those in the other two retention-critical occupational areas were similar to those of other enlisted personnel.

**Figure 2: Experiences of Enlisted Personnel**

Occupational area	Worked 61 hours or more during last workweek	Deployed 5 months or more during past year	Unit is poorly staffed	Unit poorly prepared with parts and equipment
All enlisted personnel	23 percent	19 percent	37 percent	36 percent
Electronic equipment repairers				
Communications and intelligence specialists				
Electrical/mechanical equipment repairers				
 Significantly fewer of these personnel experienced this situation compared to other enlisted personnel  A similar proportion of these personnel experienced this situation compared to other enlisted personnel  Significantly more of these personnel experienced this situation compared to other enlisted personnel				

Source: DOD's 1999 Survey of Active Duty Personnel.

## Time at Work and Away from Home

Enlisted personnel in retention-critical occupations reported working roughly the same number of hours as did other enlisted personnel. Concerns have been prevalent in recent years that servicemembers work longer hours because there are fewer staff and workloads have increased. Overall, most servicemembers reported working long hours; nearly half (47 percent) reported they worked 51 hours or more during their last full workweek, and nearly one quarter (23 percent) reported working 61 or more hours.

Those serving in retention-critical occupations deployed at roughly the same rate as did other enlisted personnel. In recent years, DOD and others have raised concerns about the increasing number of deployments and the toll these deployments are taking on military personnel. About 19 percent of the entire enlisted force reported being away from home for 5 or more

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months during the 12 months prior to completing the survey.<sup>11</sup> Excessive time away from home is believed to have a negative impact on servicemembers' overall satisfaction and thus retention intent. The survey data revealed that personnel away from home for more than 5 months during the previous 12 months were more likely to be dissatisfied than were those away for 1 month or less.<sup>12</sup>

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## Resource Shortfalls

Relative to other enlisted personnel, a higher percentage of electrical and mechanical equipment repair personnel (44 percent) reported their units were poorly staffed. Overall, more than one-third (37 percent) of all enlisted personnel reported staffing problems in their unit. Recent readiness reports show that staffing shortages adversely impacted unit readiness. In one readiness report to Congress, the Air Force reported that retention shortfalls created an experience imbalance in some key skill areas.<sup>13</sup> The same report indicated that although mission-capable rates for aircraft stabilized, the Air Force was concerned that "low retention of experienced maintenance personnel could cause these rates to once again decline or remain at low levels."

Parts and equipment shortfalls were of greater concern to personnel serving in retention-critical electrical and mechanical equipment repair occupations. Forty-five percent voiced concerns about parts and equipment problems compared to 34 percent of other enlisted personnel. To gauge the readiness impact of parts and equipment shortages, the survey asked respondents to rate their unit's preparedness regarding parts and equipment from well prepared to poorly prepared. While a significantly higher proportion of those personnel serving in electrical and mechanical equipment repair occupations raised concerns compared to other enlisted personnel, more than one-third of all enlisted personnel rated their units' preparedness as poor regarding parts and equipment.

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<sup>11</sup> This represents the cumulative length of time they were away from their permanent duty station because of their military duties during the previous year.

<sup>12</sup> *Military Personnel: Preliminary Results of DOD's 1999 Survey of Active Duty Members* (NSIAD/T-GAO-00-110, Mar. 8, 2000).

<sup>13</sup> *DOD Monthly Readiness Report to Congress* September and October 2000.

## Satisfaction and Career Intentions Were Similar

Overall, satisfaction with military life and intent to stay in the military among retention-critical personnel was similar to that expressed by other enlisted personnel. More enlisted personnel (46 percent) indicated that they were satisfied with the military way of life than were dissatisfied (30 percent). Personnel in retention-critical occupations were as likely as other enlisted personnel to plan for a full 20-year military career. Nearly half (49 percent), of all enlisted personnel indicated that they expected to serve for 20 years or more (see fig. 3).

**Figure 3: Satisfaction and Retention Intentions of Enlisted Personnel**

Occupational area	Dissatisfied with military way of life	Planning a career of 20 or more years
All enlisted personnel	30 percent	49 percent
Electronic equipment repairers	↔	↔
Communications and intelligence specialists	↔	↔
Electrical/mechanical equipment repairers	↔	↔
↔ Responses were similar to those of other enlisted personnel		

Source: DOD's 1999 Survey of Active Duty Personnel.

## Satisfaction With Military Way of Life

Nearly half (46 percent) of all enlisted personnel were satisfied with the military way of life, one-third (30 percent) were dissatisfied, and about a quarter (23 percent) were neither satisfied nor dissatisfied. Close to 50 percent of all enlisted personnel, indicated that compensation was the primary reason for staying in and for leaving the military.

## Reasons for Staying and Leaving the Military

In addition to a question about overall satisfaction with the military way of life, DOD's survey asked 37 questions concerning satisfaction with specific aspects of life in the military. These questions asked servicemembers to rate their satisfaction with issues such as basic pay, health care, leadership, and deployments, among others. In addition to expressing their level of satisfaction with each survey item, servicemembers identified their first and second reasons for staying/considering staying or leaving/considering leaving the military from the list of 37 aspects of military life.

To simplify our analysis and gain a broader perspective for the areas of greatest concern to servicemembers, we used a statistical procedure called "factor analysis" to consolidate the 37 items into a number of overarching factors.<sup>14</sup> We analyzed the top 10 factors including: compensation, military life, workload, personal health care, assignment stability, career progression, deployments, family friendliness, family health care, and co-location of military spouse. For all enlisted personnel, compensation was identified as both the top reason to stay and the top reason to leave the military. The compensation factor comprised several types of military pay, including: basic pay, special and incentive pay, bonus/continuation pay, retirement pay, housing allowance, subsistence allowance, and cost of living adjustments. Of the various types of compensation, basic pay was the top reason cited by enlisted personnel to either stay in or leave the military. Some of the other reasons to stay included assignment stability, military life, workload, and career progression. The top five reasons for staying in or for leaving the military can be found in table 2.

**Table 2: Top Five Reasons Cited by Enlisted Personnel for Staying In or Leaving the Military**

<b>Occupational Area</b>	<b>Reasons for staying</b>	<b>Percent</b>	<b>Reasons for leaving</b>	<b>Percent</b>
All enlisted personnel	1. Compensation	45	1. Compensation	51
	2. Assignment stability	33	2. Military life	31
	3. Military life	26	3. Workload	23
	4. Workload	15	4. Career progression	18
	5. Career progression	14	5. Assignment stability	14
Electronic equipment repairers	1. Compensation	49	1. Compensation	57
	2. Assignment stability	33	2. Military life	29
	3. Military life	26	3. Workload	23
	4. Workload	16	4. Career progression	17
	5. Career progression	15	5. Assignment stability	14
Communications and intelligence specialists	1. Compensation	49	1. Compensation	51
	2. Assignment stability	35	2. Military life	35
	3. Military life	29	3. Workload	22
	4. Career progression	16	4. Career progression	17
	5. Workload	13	5. Assignment stability	16

<sup>14</sup> Factor analysis is a statistical technique whose purpose is data reduction. It is used to group a large number of similar individual items into a smaller number factors based on the pattern of answers by individual respondents. In this case, we combined the first and second reasons that servicemembers cited for both staying and for leaving the military.

Occupational Area	Reasons for staying	Percent	Reasons for leaving	Percent
Electrical and mechanical equipment repairers	1. Compensation	47	1. Compensation	53
	2. Assignment stability	33	2. Military life	28
	3. Military life	25	3. Workload	25
	4. Workload	16	4. Career progression	15
	5. Career progression	14	5. Assignment stability	14

Source: GAO factor analysis of DOD survey data.

The overall responses of retention-critical personnel to the individual items that comprise the broader categories shown in table 2 were also similar to those of other enlisted personnel. Of the 37 aspects of military life that comprise these broader categories, the top 5 reasons for staying in or leaving the military were generally similar for all enlisted personnel. Basic pay (included as an element of the broader compensation category) was cited as the top reason for both staying in and for leaving the military. Job security, retirement pay, job enjoyment, and medical care for family also appeared in the top five reasons for staying in the military for both retention-critical and other enlisted personnel. For all enlisted personnel the amount of family time, quality of leadership, amount of job enjoyment, and deployments, were cited as top reasons for leaving. More detailed information about the top reasons retention-critical personnel stay in and leave the military may be found in occupational appendices III through V.

## Intent to Make the Military a Career

The intent of those in retention-critical occupations to remain in the military for a 20-year career was virtually the same as for other enlisted personnel. In response to one question asking how many total years of service they expected to have when they finally left the military, nearly 50 percent of all enlisted personnel indicated they planned to stay in the military for 20 years or more. Personnel in all three retention-critical occupational areas had similar career intentions. Unlike personnel in civilian occupations, military personnel are not vested in their retirement plan until they have served 20 years or more. This creates a disincentive for servicemembers to leave the military. As a servicemember moves closer to retirement, the lure of an attractive civilian job may not be enough to cause them to be willing to forfeit all retirement credit garnered to that point.

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











## Perceptions of Civilian Work Opportunities and Civilian Life Were Mixed

In recent years, DOD and others have cited the strong U.S. economy as a main reason why military personnel, especially those in retention-critical occupations, leave the military. Overall, enlisted personnel tend to perceive that many aspects of civilian life are attractive (see fig. 4). Seventy percent of the enlisted force believed their quality of life would be better as a civilian than as a military member. Over 70 percent believed they could make an easy transition into a civilian occupation and nearly 60 percent thought that the civilian labor market offered many options. According to officials from the Bureau of Labor Statistics, this belief is difficult to quantify but probably accurate, since the training and documented work history of these personnel make them very attractive to civilian employers. These employers tend to be very positive toward former military personnel, and it is likely that these personnel have an advantage over their civilian counterparts.

Personnel in some retention-critical occupation areas were more confident that they could do well in the civilian world compared to other enlisted personnel. Electronic equipment repairers were more optimistic about jobs in the civilian world compared to other enlisted personnel or to personnel in the other two retention-critical occupation areas. About three-quarters of the electronic equipment repairers believed the quality of civilian life would be better, their skills would transfer easily, and it would be easy for them to find a civilian job. Electrical and mechanical equipment repairers were about as optimistic as other enlisted personnel regarding jobs in the civilian world.

The perceptions of personnel serving in retention-critical occupations were mixed. To the extent they have marketable skills, the perceptions of those in retention-critical occupations were equally or more positive than other enlisted personnel. Some felt that translating their skills directly into a civilian occupation would be difficult. For instance, those serving in communications and intelligence occupations were much less positive about their ease of transition and ability to find a civilian job than were other enlisted personnel. This may be because the occupational area is made up of several occupations that may not have direct civilian counterparts. Sonar and electronics warfare specialists, for example, may not have a direct translation of their skills into a civilian occupation. Unfortunately, it was not possible for us to fully examine the responses of personnel in these individual occupation groups to assess their specific perceptions of civilian life.

**Figure 4: Perceptions of Enlisted Personnel About The Civilian World**

Occupational area	Civilian quality of life better than military	It would be easy to find a good civilian job	Experience will transfer to civilian job
All enlisted personnel	70 percent	59 percent	72 percent
Electronic equipment repairers	 77%	 73%	 87%
Communications and intelligence specialists		 51%	 59%
Electrical/mechanical equipment repairers			 84%
 Perceptions were significantly more positive compared to those of other enlisted personnel  Perceptions were similar to those of other enlisted personnel  Perceptions were significantly more negative compared to those of other enlisted personnel			

Source: DOD's 1999 Survey of Active Duty Personnel.

Asked about more specific aspects of civilian life, most enlisted personnel believed that the amount of personal family time, total compensation, number of hours worked in a week, and general quality of life would be better in the civilian world. In addition, most enlisted personnel also believed promotion opportunities would be better in the civilian world. However, almost half of all enlisted personnel viewed vacation time, education opportunities, and health care as being better in the military.

## Agency Comments and Our Evaluation

We provided a draft of this report to the Office of the Secretary of Defense for comment. The Department concurred with our report. In addition, the Department indicated it is important that the retention-critical occupations provided by the services be viewed as a "snapshot in time," and the occupations cited in our report represent those that were deemed retention-critical at the time of submission to GAO. According to DOD, these career fields, along with their priority order, periodically change as a result of many factors. The full text of the Department's comments appears in Appendix II.

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The Department also suggested some technical changes, which we incorporated as appropriate.

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Appendix I contains our objectives, scope, and methodology. Appendix II contains DOD's comments on this report. Appendixes III, IV, and V provide a detailed analysis of the survey responses for each occupational area.

We are sending copies of this report to appropriate congressional committees; the Honorable Donald H. Rumsfeld, Secretary of Defense; and David S. C. Chu, Under Secretary of Defense, Personnel and Readiness. Copies will also be made available to other interested parties upon request.

If you or your staff have any questions about this report, please contact me at 202-512-5559. A list of additional contacts and staff acknowledgments is in appendix VI.



Derek B. Stewart  
Director  
Defense Capabilities and Management



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# Appendix I: Objectives, Scope, and Methodology

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Reliable assessments of military climate are essential for congressional policymakers as they consider the quality-of-life proposals offered by the Department of Defense (DOD). Our analysis of DOD's retention-critical occupations relied on such a survey. To obtain this data, we worked with the Department to design the 1999 Survey of Active Duty Personnel. It was mailed in the fall of 1999 to a stratified, random sample of over 66,000 military personnel. DOD provided the final survey data to us in late 2000. We performed our work between September 2000 and June 2001 in accordance with generally accepted government auditing standards. Technical details about the survey and our analysis of retention-critical occupations follow.

Our objective in assessing retention-critical occupations was to determine if there were any significant differences between the responses of retention-critical enlisted personnel and other enlisted personnel. We defined a significant and meaningful difference as a  $\pm 7$  percent difference between the responses of retention-critical personnel and other enlisted personnel. Our analysis focused on three areas: (1) what were the expectations and experiences of enlisted personnel, (2) how satisfied were they with military life and what were their career intentions, and (3) what were their perceptions of civilian work opportunities and quality of life. DOD's 1999 Survey of Active Duty Personnel helped us identify differences in these areas.

This report refers to the enlisted population in three different ways: all enlisted personnel, retention-critical personnel, and other enlisted personnel. The first, all enlisted personnel, is comprised of the entire enlisted force and refers to the projected responses of the entire enlisted population. The second, "retention-critical" personnel, refers to only those personnel whose service identified their occupation as retention-critical. The third, "other enlisted personnel," refers to those enlisted personnel that were not a part of the specific retention-critical occupation area analyzed. For example, our analysis of electronic-equipment repairers compared the responses of personnel within this retention-critical occupation area to the responses of all "other enlisted personnel," which included the responses of personnel in the other two retention-critical occupation areas.

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## Development of DOD's 1999 Survey of Active Duty Personnel

The active duty survey is a recurring survey that DOD last administered in 1992. When the Department learned that the Subcommittee on Military Personnel had asked us to administer a separate survey to military personnel, the Acting Assistant Secretary of Defense (Force Management Policy) offered to allow us to include questions on the survey DOD was already planning to conduct. We then worked with DOD staff to refine the survey instrument and address additional content areas. The survey was pretested and refined at Navy bases around Jacksonville, Florida; Pope Air Force Base, Fayetteville, North Carolina; and the U.S. Marine base at Quantico, Virginia. Time constraints prevented additional pretesting with Army and Coast Guard personnel beyond that already conducted by DOD on an earlier version of the survey.

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## Sample Construction

The sample of 66,040 military members was drawn from a May 1999 population of 1,419,269 active duty DOD and U.S. Coast Guard personnel who were below the rank of admiral or general and had at least 6 months of service. The sample was stratified on five variables: service; pay grade; gender; location; that is, inside or outside the continental United States; and marital status. DOD survey experts used response rates from prior surveys to adjust the sample for groups with differing expected rates of survey completion. Also, the sample was designed to provide varying levels of precision for numerous subgroups (e.g.,  $\pm 3$  percentage points for each service or pay grade group and  $\pm 5$  percentage points for senior officers in the Army).

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## Survey Administration

As of January 2000, DOD had received 37,119 surveys between the start of the survey administration and the end of the fielding period. Some surveys were eliminated because they (1) had been returned blank, (2) were duplicates from the same individual, or (3) came from respondents who had left active duty before the fielding period ended. DOD computed a weighted response rate of 51 percent. The Department used a contractor to administer the survey. We did not test the contractor's procedures or validate the data provided to us. We did review DOD's and its contractor's quality control procedures for a similar large survey.

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## Weighting Responses

Data were weighted to reflect the population of interest. The weights reflected (1) the probability of selection for that servicemember, (2) a nonresponse adjustment to minimize bias arising from differential response rates among demographic subgroups, and (3) a post-

stratification factor for September 1999—the month in which the questionnaire was first distributed.

DOD assumed that nonrespondents would have answered like respondents—an often-used assumption in survey methodologies. There is some risk of nonresponse bias, but it would take elaborate and time-consuming work to test for this bias. In recent years, both military and civilian surveys have experienced decreased response rates. Although weighting can adjust for the differing sampling rates and response rates within the sampling cells, it cannot adjust for possible differences between those who do and those who do not respond to a survey. However, the active duty survey is the only source of DOD-wide information for many issues, and it is far more reliable than anecdotal information or information generated by smaller, nonrepresentative samples.

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## Identifying Retention-Critical Personnel

To obtain a list of retention-critical occupations, we asked each of the services to identify occupations they considered retention-critical because of their impact on readiness. The services identified a total of 64 occupations deemed retention-critical. Since each service uses a unique occupational coding scheme, we used DOD's Occupational Conversion Index<sup>1</sup> to convert groups of service occupation codes into a common set of occupation codes that make it possible to compare similar occupations across all the services. Although the work performed within these occupations may differ from service to service, the skills they require are similar enough to make comparisons possible. For example, DOD's index makes it possible to group all personnel who do radio and radar repair work into a single occupation area. We organized all 64 occupations into their respective occupational groups, then further consolidated these 16 groups into 3 occupational areas.

The DOD coding scheme is organized into three levels of detail: an aggregate level (one-digit) called an "occupational area," a middle level (two-digits) called an "occupational group," and a more detailed level (three-digits) called an "occupational subgroup." Since DOD's survey was not specifically designed to gather information about military occupations, our analysis focused predominantly on the occupational area because a more detailed analysis would have limited the precision of our results. Conducting our analysis at the occupational area level provided a large

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<sup>1</sup> *Occupational Conversion Index: Enlisted/Officer/Civilian*, Mar. 1997 (DOD1312.1-1).

enough sample size to make our analysis more precise. The occupations identified by each of the services as retention-critical are shown in table 3.

**Table 3: Retention-Critical Occupations Identified by DOD and the Services, Organized by Occupational Area and Occupational Group**

Occupational area	Occupational group
Electronic equipment repairers	<ul style="list-style-type: none"> <li>• Radio/radar repairers</li> <li>• Fire control electronic systems (nonmissile) personnel</li> <li>• Missile guidance, control and checkout personnel</li> <li>• Sonar equipment repairers</li> <li>• Other electronic equipment repairers</li> </ul>
Communications and intelligence specialists	<ul style="list-style-type: none"> <li>• Radio and radio code operators</li> <li>• Sonar operators</li> <li>• Radar and air traffic controllers</li> <li>• Signal intelligence/electronic warfare personnel</li> <li>• Intelligence personnel</li> <li>• Combat operations controllers</li> </ul>
Electrical and mechanical equipment repairers	<ul style="list-style-type: none"> <li>• Aircraft and aircraft-related repairers</li> <li>• Automotive repairers</li> <li>• Wire communications repairers</li> <li>• Power generating equipment repairers</li> <li>• Precision equipment repairers</li> </ul>

Source: DOD Occupational Conversion Index.

## Air Force

The Air Force identified 21 occupations (see table 4) considered retention-critical, however, it normally does not classify its occupations as retention-critical. Rather, efforts are made to retain all personnel regardless of specialty. To this end, the Air Force sets aggregate reenlistment goals based on years of service rather than occupation. For example, the Air Force currently wants to retain 55 percent of its first term, 75 percent of its second term, and 95 percent of its career enlisted personnel. According to Air Force officials, these reenlistment goals are used because they represent historically observed levels during "good" force sustainment periods.

**Table 4: Air Force Retention-Critical Occupations**

Priority	DOD occupation code	Air Force specialty code	Occupation title
1.	E22	1C1X1	Air traffic control
2.	E25	1C2X1	Combat control
3.	E20	1A3X1	Airborne communications
4.	E20	3C2X1	Communications-computer systems control
5.	E05	1T2X1	Pararescue
6.	E22	1A4X1X	Air battle management system
7.	E23	1N3XXX	Crypto linguist
8.	E24	1N0X1	Intelligence applications
9.	E22	1C6X1	Space systems operation
10.	E25	1C4X1	Tactical air command and control
11.	E24	1N1X1	Intelligence imagery analysis
12.	E23	1N4X1	Signals intelligence analyst
13.	E55	1N5X1	Electronic signals intelligence exploitation
14.	E42	1W0X1X	Weather
15.	E10	2A1X4	Airborne surveillance radar systems
16.	E60	2A5X2	Helicopter maintenance
17.	E19	2A5X3C	Bomber avionics systems
18.	E60	2A6X1B	Aerospace prop, turboprop and turboshaft
19.	E60	2A6X3	Aircrew egress system
20.	E10	2E1X1	Satellite wide-band telemetry systems
21.	E66	3E0X2	Electrical power production

Source: U.S. Air Force.

## Army

The Army identified 12 occupations it considered retention-critical (see table 5).<sup>2</sup> They define retention-critical as an occupation with historic staffing shortfalls that are 10 percent below an Army average by grade and occupation.

**Table 5: Army Retention-Critical Occupations**

Priority	DOD occupation code	Army occupation code	Occupation title
1.	E25	13F	Fire support specialist
2.	E04	13P	Multiple launch rocket system operations/fire direction specialist
3.	E20	31F	Network switching systems operator-maintainer
4.	E10	31S	Satellite communications systems operator-maintainer
5.	E10	35M	Radar repairer
6.	E61	63B	Wheeled vehicle mechanic
7.	E60	67T	Helicopter repairer
8.	E82	77F	Petroleum supply specialist
9.	E55	92Y	Unit supply specialist
10.	E22	93C	Air traffic control operator
11.	E24	96B	Intelligence analyst
12.	E23	98G	Voice interceptor

Source: U.S. Army.

## Marine Corps

As shown in table 6, the Marine Corps identified 13 occupations it considered retention-critical. The Marine Corps defines retention-critical

<sup>2</sup> As of May 9, 2001 the Army revised its retention-critical priority list to reflect a new top 10 list of retention-critical occupations. According to an Army official, this revision reflects changes brought about by the recent Army transformation efforts. The revised list of occupations included infantry, forward support specialists, Multiple Launch Rocket System (MLRS) operators/fire direction specialists, firefinder radar operators, patriot missile operators, petroleum supply specialists, food service, special forces, air traffic control operators, and voice interceptors. Four occupations were included in our original analysis, these were MLRS, petroleum supply specialists, air traffic controllers, and voice interpreters. Eight occupations did not appear on the Army's revised retention-critical occupations list, these were: fire support specialists, network switching systems operator-maintainer, satellite communications systems operator-maintainer, radar repairer, wheeled vehicle mechanic, helicopter repairer, unit supply specialist, and intelligence analyst.

occupations based upon each occupation's strategic importance and the difficulty it has retaining personnel in the occupation.

**Table 6: Marine Corps Retention-Critical Occupations**

Priority	DOD occupation code	Marine Corps occupation code	Occupation title
1.	E10	6463	Radar test station technician
2.	E10	2823	Technical controller
3.	E10	6032	Fixed wing aircraft flight engineer
4.	E24	0211	Counterintelligence specialist
5.	E24	0251	Interrogator/debriefer-translation specialist
6.	E60	6035	Aircraft power plants test cell operator, fixed wing
7.	E10	2834	Satellite communications technician
8.	E10	2832	Multi-channel equipment technician
9.	E43	2336	Explosive ordnance disposal technician
10.	E83	5821	Criminal investigator
11.	E24	7314	Unmanned arial vehicle operator
12.	E05	7372	First navigator
13.	E20	7382	Airborne radio operator/loadmaster

Source: U.S. Marine Corps.

## Navy

The Navy identified 18 occupations as retention-critical (see table 7). It defines retention-critical as any occupation filled significantly below authorized levels, traditionally hard to fill, difficult to train, strategic due to the skills required, and having the greatest number of opportunities in the private sector.

Table 7: Navy Retention-Critical Occupations

Priority	DOD occupation code	Navy rating	Occupation title
1.	E66	33xx	Nuclear propulsion plant operators and supervisors
2.	E21	17xx (EW) 78xx (AW)	Electronic warfare technicians and systems operators
3.	E23	92xx (CTI) 91xx (CTR)	Cryptologic technicians
4.	E10, E11, E12	11xx (FC) 11xx 13xx (FT)	Fire controlmen
5.	E13	04xx (STG) (STS)	Sonar technicians
6.	E10, E19	14xx 15xx (ET) 66xx 79xx (AT)	Nonnuclear electronics technicians
7.	E22	69xx (AC)	Air traffic control
8.	E43	53xx	Divers
9.	E19, E67, E62	47xx (IC)	Interior communications technicians
10.	E60	AME	Aviation structural mechanics - safety equipment

Source: U.S. Navy.

## Assessing Retention-Critical Personnel

We compared the survey responses of personnel serving in retention-critical occupations to those of other enlisted personnel. Significant and meaningful differences were judged to exist if percentages between the groups varied by at least  $\pm 7$  percentage points. Each occupational profile was comprised of the same set of survey questions. To ensure that our analysis represented only the responses of retention-critical personnel, we limited our review to responses from personnel whose service identified their occupation as retention-critical. For example, although all the services have personnel who serve in missile guidance control and checkout occupations—as defined by DOD's Occupational Conversion Index—only the Navy identified personnel in this occupation as retention critical and only the responses of Navy personnel were analyzed.

Since DOD's survey was not designed specifically for an occupational analysis, the amount of detail we could provide in many occupational groups was limited. By consolidating the responses of the occupational



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groups into three larger occupational areas, we were able to obtain a large enough sample size to ensure our results were representative of that area. As a result, we were able to obtain a precision level of  $\pm 5$  percent for most survey items.

# Appendix II: Comments From the Department of Defense



PERSONNEL AND  
READINESS

UNDER SECRETARY OF DEFENSE  
4000 DEFENSE PENTAGON  
WASHINGTON, D.C. 20301-4000



JUN 26 2001

Mr. Derek B. Stewart  
Director, Defense Capabilities and Management  
U. S. General Accounting Office  
Washington D. C. 20548

Dear Mr. Stewart:

This is the Department of Defense (DoD) response to the GAO Draft Report, "MILITARY PERSONNEL: Perceptions of Retention-Critical Personnel Are Similar to Those of Other Enlisted Personnel," May 25, 2001 (GAO Code 702073/OSD Case 4004).

The Department of Defense concurs with the GAO draft report. While we are in agreement with GAO's conclusion, we believe it is important to point out that the retention-critical occupations provided by the Services should be viewed as a "snapshot in time" representative sampling deemed retention-critical at the time of submission to GAO. These career fields, along with their priority order, periodically change as a result of many factors; case in point is footnote 17 on page 31 highlighting the Army's retention-critical listing revision of May 2001. Additionally, comments which are administrative in nature were provided under separate cover.

Sincerely,

David S. C. Chu



# Appendix III: Electronic Equipment Repairers

Electronic equipment repairers' expectations and experiences were similar to those of other enlisted personnel, as were their levels of satisfaction and retention intentions. Significantly more of these personnel had positive perceptions of their civilian opportunities compared to other enlisted personnel. More of them believed that both their general quality of life and compensation would be better in the civilian world and that they could easily find jobs if they left the military. Most believed their military skills would easily transfer into a civilian occupation. This set of beliefs leads to the conclusion that these personnel are being pulled out of the military rather than pushed out, as some have thought.

Within the, electronic equipment repairer occupational area, the services identified retention-critical occupations that fit within five DOD occupation groups.<sup>1</sup> These occupational groups were radio and radar repair; fire control electronic systems (nonmissile); missile guidance, control and checkout; sonar equipment repair; and other electronic equipment repair occupations. Personnel in these occupational groups perform a variety of maintenance and repair services on electronic equipment, including radio, radar, navigation, weapons, and computers, among other things.

Table 8 describes each occupation and provides details about the number of survey respondents, including the size of the enlisted population their responses were projected to represent. Some occupation groups are common across all the services, but not all the services identified the same occupation groups as being retention-critical. Our analysis included only the responses of personnel whose occupation groups were identified as retention-critical. Personnel that work within the same occupation group, but whose service did not identify that group as retention-critical were excluded from our analysis. The occupations described in table 8 are only those that each service identified as retention-critical.

<sup>1</sup> The electronic equipment repair occupational area is comprised of eight occupational groups: radio and radar repair; fire control electronic systems; missile guidance, control and checkout; sonar equipment; nuclear weapons equipment, automated data processing computers; teletype and cryptographic equipment; and other electronic equipment.

Table 8: Description of Retention-Critical Electronic Equipment Repair Occupational Groups

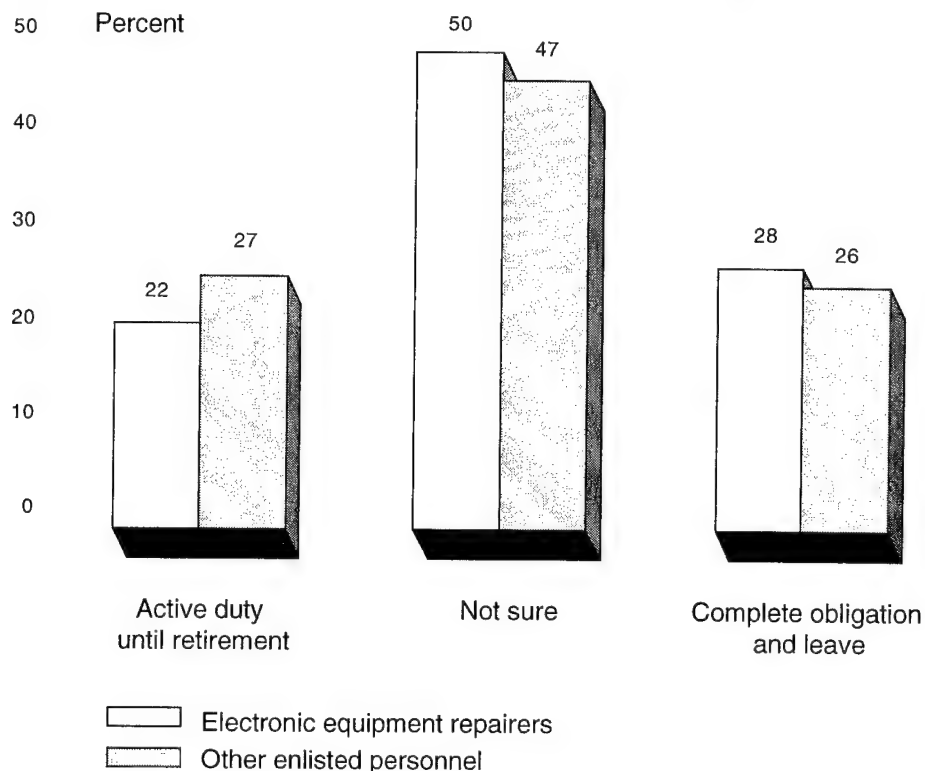
Occupational group	Service	Number of respondents	Projected population	Occupation description
E10 Radio and radar repairers	Army	266	21,980	Repairs fixed and mobile radios; air traffic and tracking radar; communication, navigation, and electronic countermeasure gear.
	Air Force	230	16,690	
	Marines	107	5,899	
	Navy	234	19,399	
		837	63,968	
E11 Fire control electronic systems (non-missile) repairers	Navy	37	2,847	Maintains and repairs electronic fire control and bomb navigation equipment, excluding missile and underwater fire control equipment.
		37	2,847	
E12 Missile guidance, control and checkout	Navy	90	7,290	Specializes in guidance control and checkout equipment for guided and ballistic missiles.
		90	7,290	
E13 Sonar equipment repairers	Navy	77	6,019	Specialists in underwater detection and fire control systems, oceanographic equipment, and related antisubmarine gear.
		77	6,019	
E19 Other electronic equipment repairers	Air Force	91	6,007	Specializes in working with training devices, inertial navigation systems, and electronic instruments.
	Navy	30	2,167	
		121	8,174	
<b>Total</b>		<b>1,162</b>	<b>88,298</b>	

Source: DOD

## Expectations

The survey asked servicemembers to recall what their career intentions were when they first entered the military. The career intentions of those serving in electronic equipment repair occupations, upon entering the military, were basically the same as other enlisted personnel (see fig. 5). As with other enlisted personnel, electronic equipment repairers were mostly unsure (50 percent) about their career intentions when they first joined the military. The remaining personnel were fairly evenly split between those who intended to remain until retirement and those who intended to serve their initial obligation and leave.

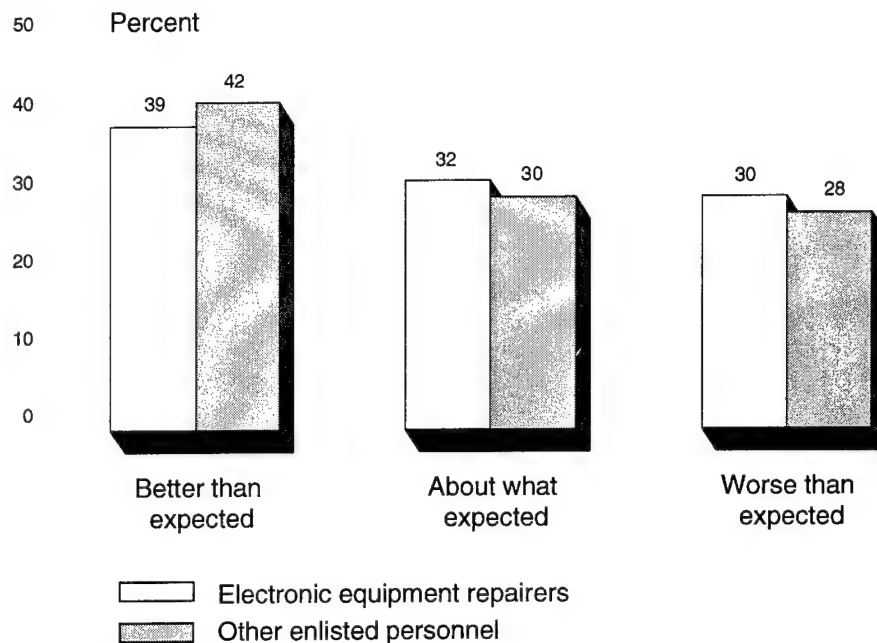
Figure 5: Electronic Equipment Repairers' Career Intent on Entry



Source: DOD's 1999 Survey of Active Duty Personnel.

Electronic equipment repairers' perceptions about how the military had met their expectations when they entered were similar to those of other enlisted personnel (see fig. 6). When asked how military life met the expectations they had when they first joined the military, around 40 percent of both electronic equipment repairers and other enlisted personnel indicated that life in the military was better than expected. About 30 percent indicated military life was about what they expected. Roughly 30 percent indicated military life was worse than expected.

**Figure 6: Electronic Equipment Repairers' Perceptions of Military Life Compared to Expectations at Entry**



Source: DOD's 1999 Survey of Active Duty Personnel.

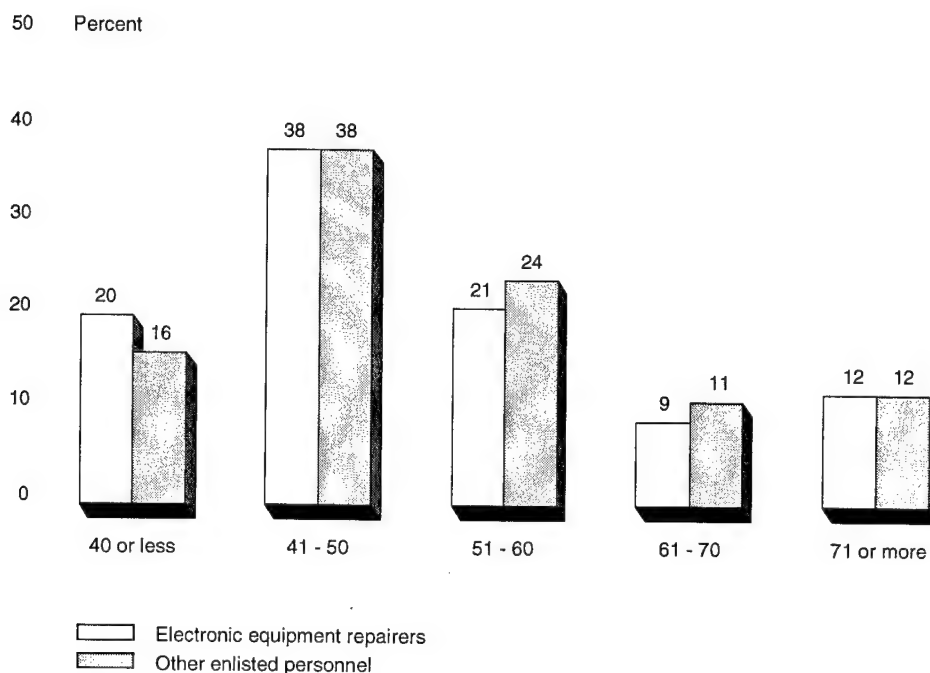
## Experiences

The experiences of those working in electronic equipment repair occupations were about the same as those for other enlisted personnel. They worked about as many hours, were away from home about as much, and reported their units were about as prepared regarding staffing and parts and equipment as other enlisted personnel.

## Time at Work and Away from Home

Overall, electronic equipment repairers reported working about the same number of hours as did other enlisted personnel. Over 40 percent reported working 51 hours or more during their previous workweek. About one-quarter indicated they worked 61 hours or more during their last full workweek (see fig. 7).

**Figure 7: Number of Hours Electronic Equipment Repairers Reported Working During Previous Workweek**



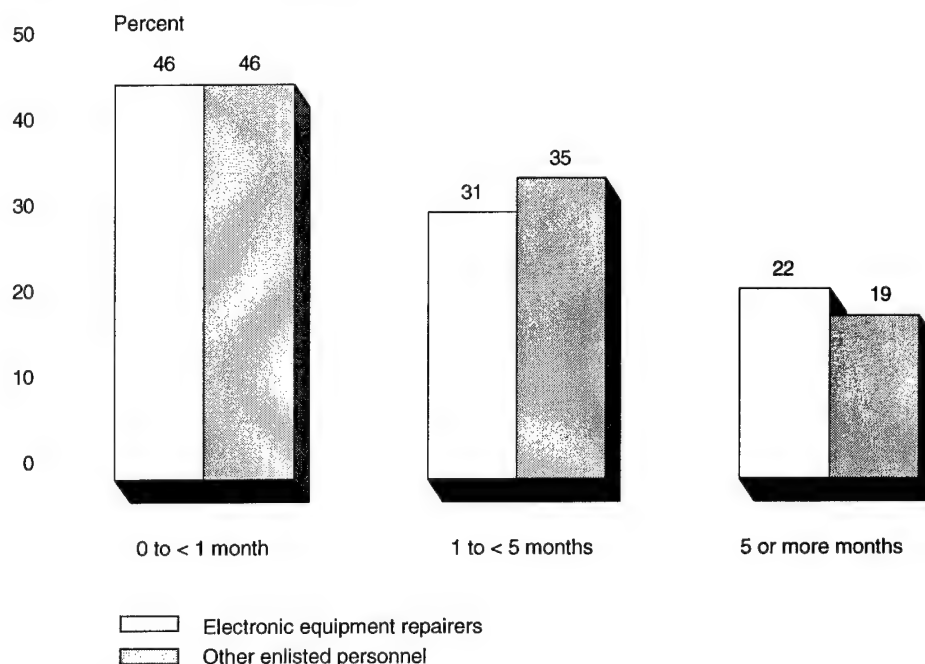
Source: DOD's 1999 Survey of Active Duty Personnel.

Concerns have been raised in recent years that military personnel are away from home excessively. Electronic equipment repair personnel were away from home for roughly the same amount of time as other enlisted personnel. Overall, about one-fifth of both electronic equipment repairers (22 percent) and other enlisted personnel (19 percent) reported being away from home a total of 5 months or more during the previous year.<sup>2</sup>

<sup>2</sup> Servicemembers were asked to report the total length of time they were away home because of their military duties. To calculate the total length of time away, servicemembers were asked to add up all the nights they were away from their permanent duty station during the previous 12 months.

Nearly half of each group reported they had been away for 1 month or less during the previous 12 months (see fig. 8).

**Figure 8: Number of Months Electronic Equipment Repairers Were Away from Home During Previous 12 Months**



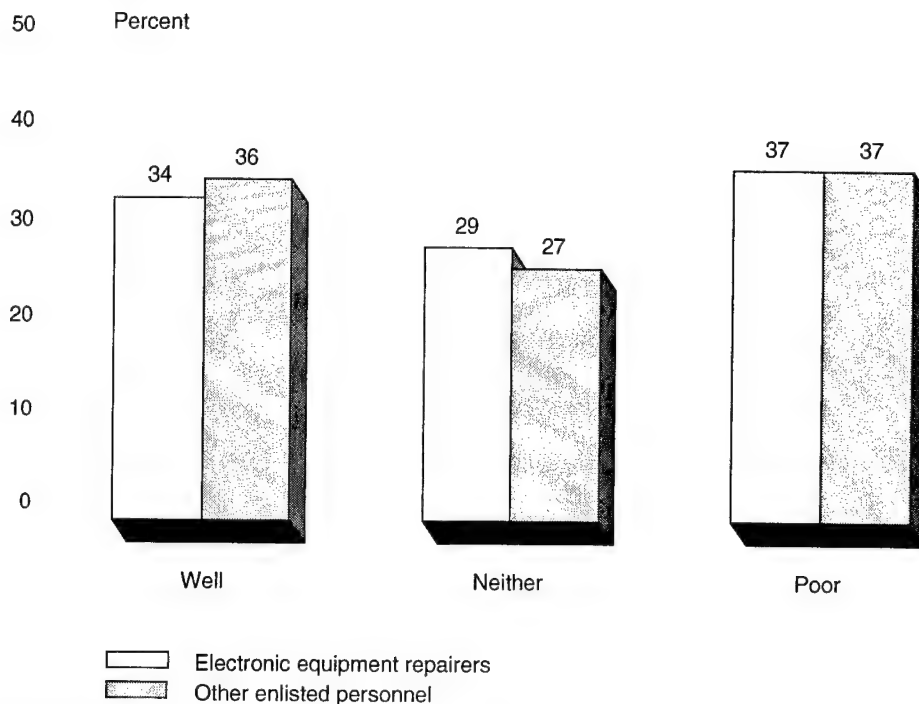
Source: DOD's 1999 Survey of Active Duty Personnel.

## Resource Shortfalls

Concerns about having enough personnel were about the same for electronic equipment repairers as for other enlisted personnel. Nearly 40 percent of both the electronic equipment repairers and other enlisted personnel reported their unit's preparation was poor regarding staffing preparedness (see fig. 9).



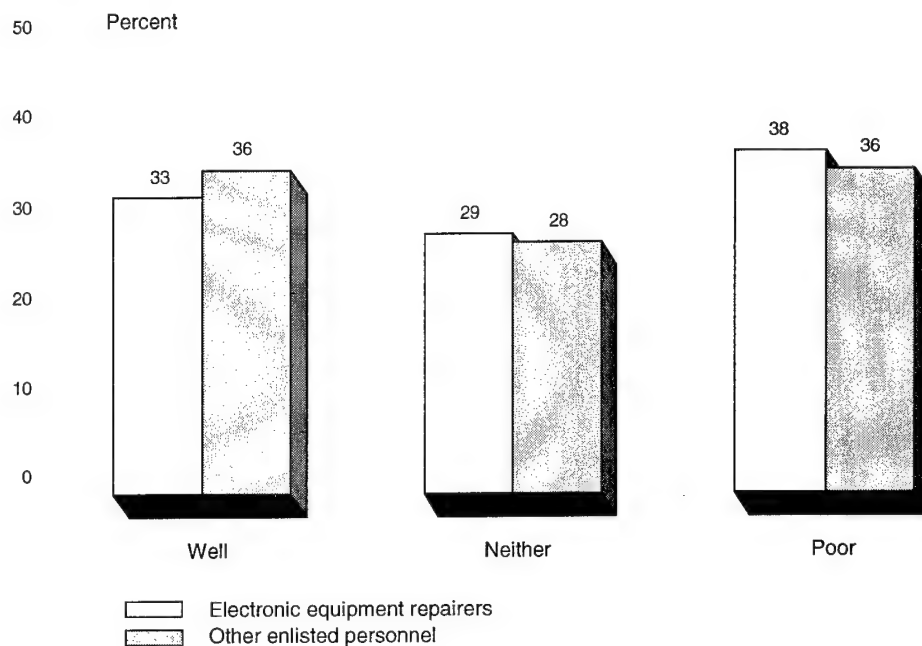
**Figure 9: Electronic Equipment Repairers' Perceptions of Unit Staffing Preparedness**



Source: DOD's 1999 Survey of Active Duty Personnel.

Parts and equipment preparedness has also been a major concern during recent years. Overall, more than one-third of other enlisted personnel indicated that parts and equipment preparedness was poor in their unit. Electronic equipment repairers provided a similar assessment (see fig. 10).

**Figure 10: Electronic Equipment Repairers' Perceptions of Unit Preparedness Regarding Parts and Equipment**

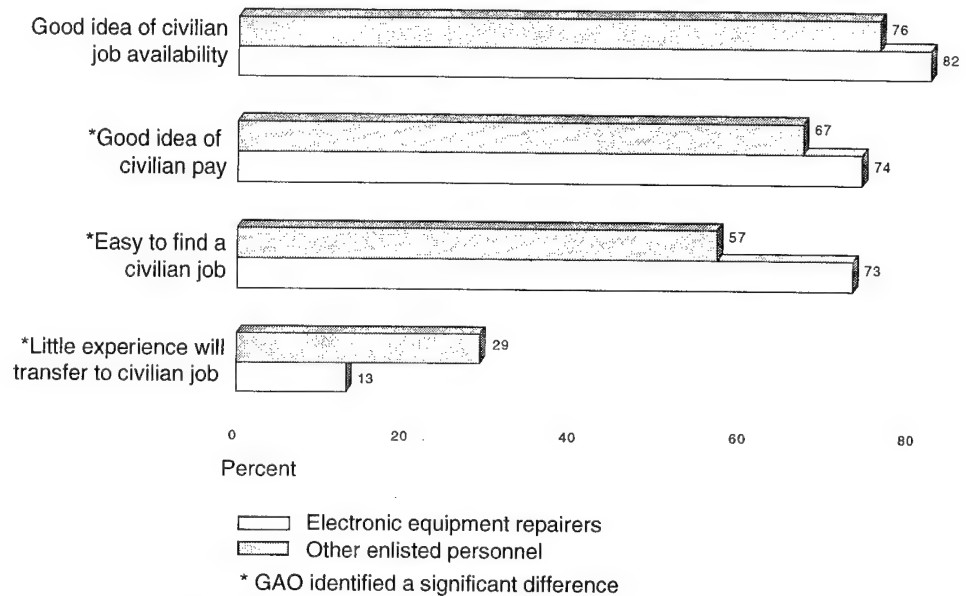


Source: DOD's 1999 Survey Of Active Duty Personnel.

## Perceptions of Civilian Opportunities

A higher percentage of electronic equipment repairers were optimistic about their job prospects in the civilian sector compared to other enlisted personnel (see fig. 11). Significantly more electronic equipment repairers indicated they had a good idea of the types of civilian jobs that would be available to them and what these jobs would pay. A higher percentage also thought it would be easy to find a civilian job and that their skills would easily transfer. According to the Bureau for Labor Statistics Occupational Outlook Handbook, this occupational area is expected to grow between 10 and 20 percent during the next 7 years. Much of this growth is expected to occur because of the increasing demand for sophisticated telecommunications equipment. Although projections vary depending on the occupational specialty, overall job prospects for those in electronic equipment repair occupations appear to be good. Overall, other enlisted personnel were also optimistic about their ability to find and transition into a civilian job.

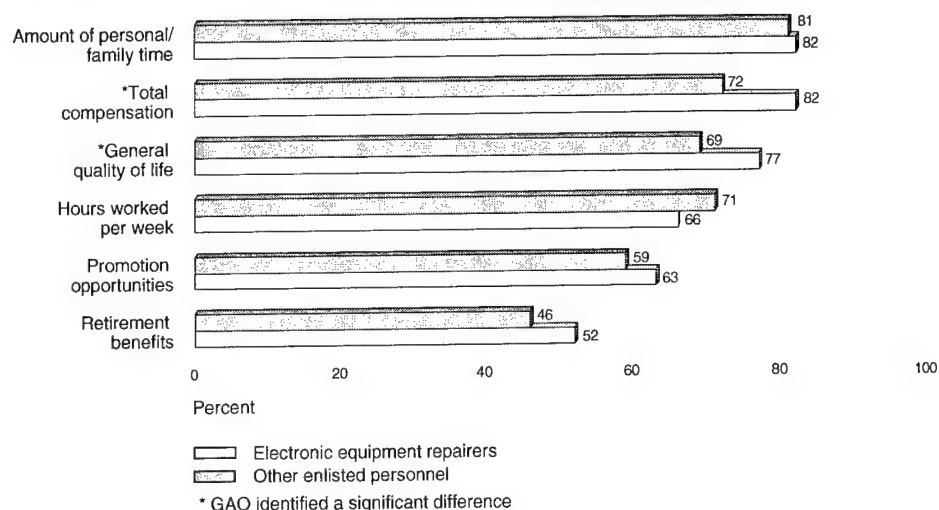
**Figure 11: Electronic Equipment Repairers' Perceptions of Civilian Work Opportunities**



Source: DOD's 1999 Survey of Active Duty Personnel.

Figure 12 shows those areas where enlisted personnel saw civilian life as being better than military life. However, there were two significant differences between electronic equipment repairers and other enlisted personnel. More electronic equipment repairers indicated that total compensation and general quality of life would be better in the civilian world than in the military.

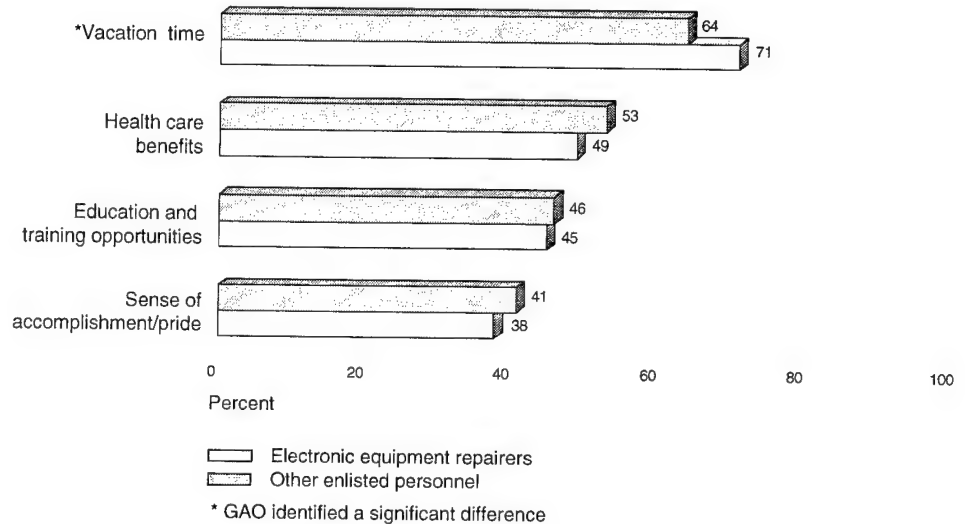
**Figure 12: Electronic Equipment Repairers' Perceptions of Civilian Life Being Better than Military Life**



Source: DOD's 1999 Survey of Active Duty Personnel.

Figure 13 shows four categories where electronic equipment repairers indicated military life was better than civilian life. Vacation time, health care benefits, education and training opportunities, and a sense of accomplishment were all seen as better in the military than in the civilian world. The only significant difference between the perceptions of electronic equipment repairers and other enlisted personnel was in regard to the amount of vacation time. A significantly higher percentage of the electronic equipment repairers indicated that vacation time was better in the military.

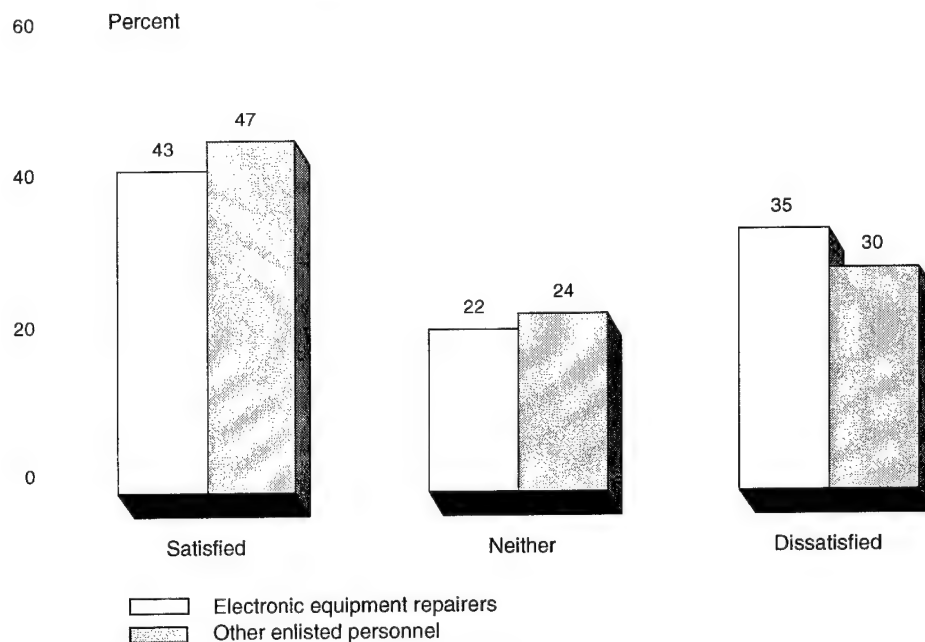
**Figure 13: Electronic Equipment Repairers' Perceptions of Military Life Being Better than Civilian Life**



Source: DOD's 1999 Survey of Active Duty Personnel.

## Satisfaction and Career Intentions

Overall, electronic equipment repair personnel were generally as satisfied with the military way of life as were other enlisted personnel (see fig. 14). While nearly 45 percent of both groups indicated they were satisfied with the military way of life, another one-third indicated they were dissatisfied.

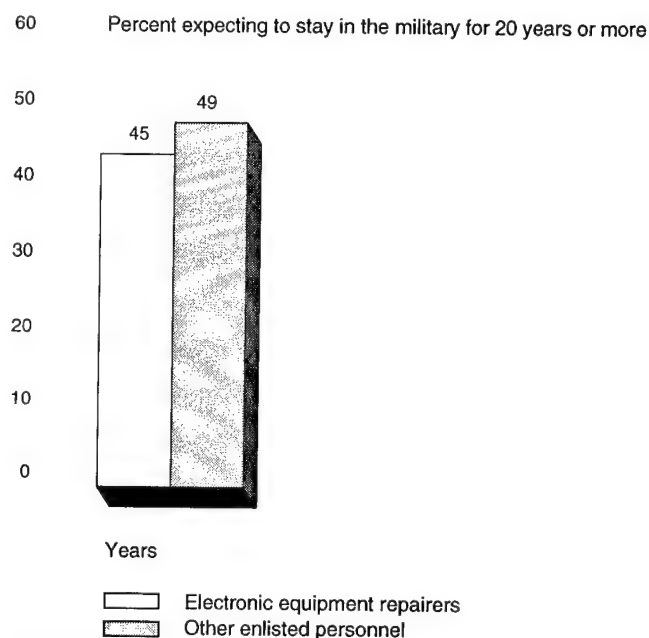
**Figure 14: Electronic Equipment Repairers' Overall Satisfaction with Military Life**

Source: DOD's 1999 Survey of Active Duty Personnel.

## Retention Intention

Forty-five percent of electronic equipment repairers indicated they expect to serve 20 years or more before leaving the military. Figure 15 shows the career intentions of servicemembers based upon how many years of service they believed they would have in when they leave or retire from military service.

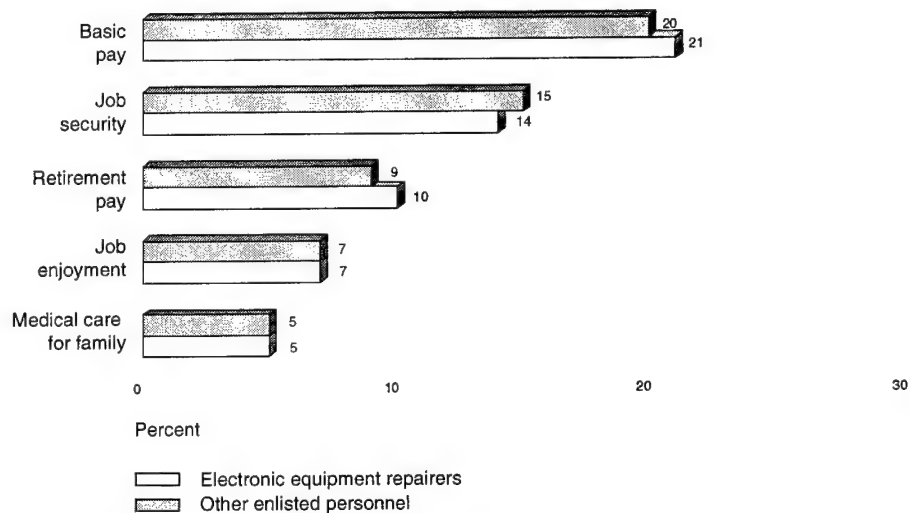
**Figure 15: Electronic Equipment Repairers' Career Intent**



Source: DOD's 1999 Survey of Active Duty Personnel.

## Reasons for Staying and Leaving

Electronic equipment repairers' reasons for remaining in the military were similar to those of other enlisted personnel. Basic pay, job security, retirement benefits, job enjoyment, and medical care for family were all cited as top reasons for staying in the military. As with other enlisted personnel, basic pay appeared as the top reason for both staying in and leaving the military. There were no significant differences between the responses of electronic equipment repairers and other enlisted personnel in the 5 categories measured (see fig. 16).

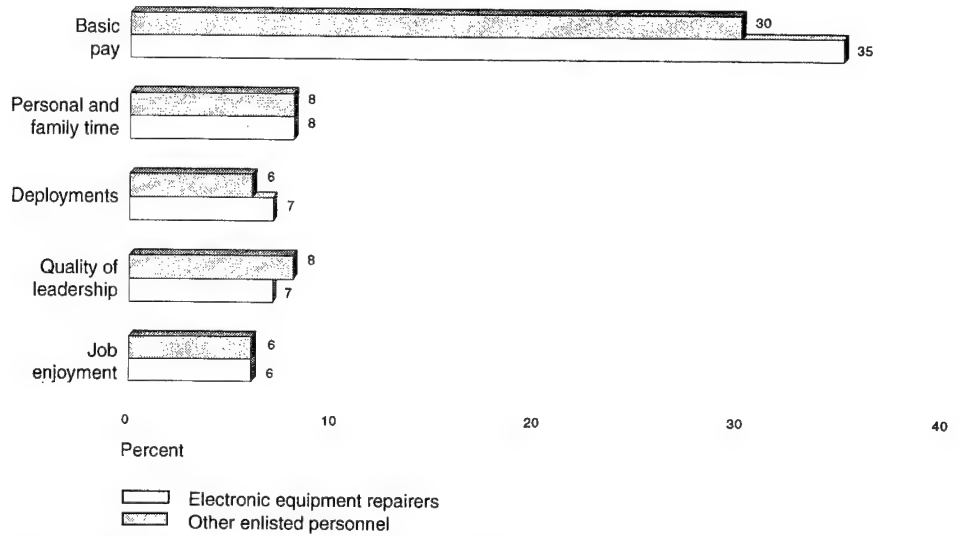
**Figure 16: Electronic Equipment Repairers' Top Five Reasons for Staying in the Military**

Source: DOD's 1999 Survey of Active Duty Personnel.

Electronic equipment repairers' reasons for leaving the military were similar to those of other enlisted personnel. The top five reasons for leaving the military included basic pay, amount of personal and family time, deployments, quality of leadership, and job enjoyment (see fig. 17). There were no significant differences between the responses of electronic equipment repairers and other enlisted personnel.



**Figure 17: Electronic Equipment Repairers' Top Five Reasons for Leaving the Military**



Source: DOD's 1999 Survey of Active Duty Personnel.

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# Appendix IV: Communications and Intelligence Specialists

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The expectations, experiences, satisfaction and retention intentions of personnel working in communications and intelligence occupations were generally similar to those of other enlisted personnel. However, proportionally fewer of the communications and intelligence specialists had positive perceptions about civilian work opportunities than did other enlisted personnel. This likely reflects the diverse nature of the occupational area. While air traffic controllers have a clear civilian counterpart, sonar equipment operators may not have any comparable civilian occupations. Because of this, the results for some occupations within this occupational area may be less positive than for others.

Within the communications and intelligence occupational area, the retention-critical occupations identified by the services fit within six occupation groups. These occupation groups were radio and radio code, sonar, radar and air traffic control, signal intelligence/electronic warfare, intelligence, and combat operations control.<sup>1</sup> Personnel in these occupation groups are responsible for operating and monitoring radio, radar, sonar and communications and intelligence consoles, among other types of duties. They also gather and interpret photographic, electronic and documentary intelligence.

Table 9 describes each occupation and provides details regarding the number of survey respondents and the size of the population their responses are projected to represent. Some occupation groups are common across all the services, but not all the services identified the same occupation groups as being retention-critical. Our analysis was conducted using only the responses of personnel whose occupation groups were identified by their service as retention-critical. Personnel that work within the same occupation group, but whose service did not identify that group as retention-critical were excluded from our analysis. The occupations described in table 9 are only those that each service identified as retention-critical.

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<sup>1</sup> The communications and intelligence occupation area is comprised of seven occupational groups: radio and radio code, sonar, radar and air traffic control, signal intelligence/electronic warfare, intelligence, combat operations control and communications center operations.

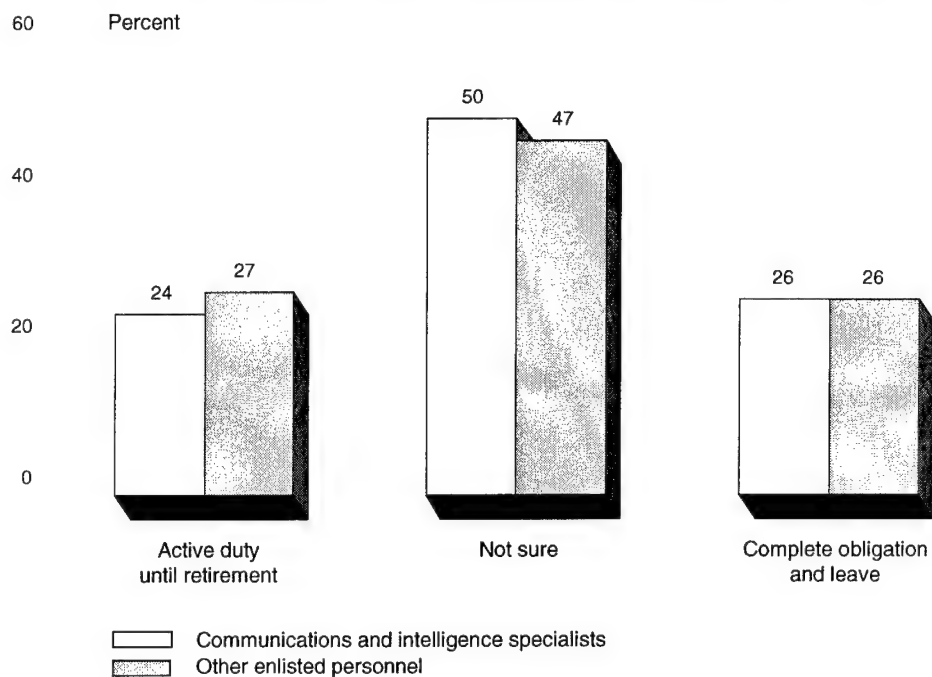
Table 9: Description of Retention-Critical Communications and Intelligence Occupational Groups

DOD Occupation group	Service	Number of respondents	Projected population	Occupation description
E20	Army	14	1,001	Operates radio, radio teletype, and visual communications equipment.
Radio and radio code specialists	Air Force	45	3,372	
	Marines	77	5,023	
		136	9,396	
E21	Navy	31	2,428	Specializes in the operation of sonar and related detection equipment.
Sonar specialists		31	2,428	
E22	Army	17	990	Operates surveillance, target acquisition and tracking radars, fire distribution devices, and air traffic control visual and electronic navigational aids.
Radar and air traffic control specialists	Air Force	85	5,245	
	Navy	132	10,163	
		234	16,398	
E23	Army	123	10,554	Intercepts, translates, and analyzes foreign communications, and operates electronic countermeasures equipment.
Signal intelligence/ electronic warfare specialists	Air Force	123	8,248	
	Navy	98	7,252	
		344	26,054	
E24	Army	101	6,814	Gathers, receives, and analyzes non-signal intelligence data, interrogates prisoners, other language translators and interpreters, image interpretation, and specializes in counterintelligence and investigative activities.
Intelligence specialists	Air Force	49	3,552	
	Marines	25	1,458	
		175	11,824	
E25	Army	166	12,392	Specializes in forward area tactical operations and intelligence and in command post control activities.
Combat operations control specialists	Air Force	39	2,999	
		205	15,391	
<b>Total</b>		<b>1,125</b>	<b>81,491</b>	

Source: DOD.

## Expectations

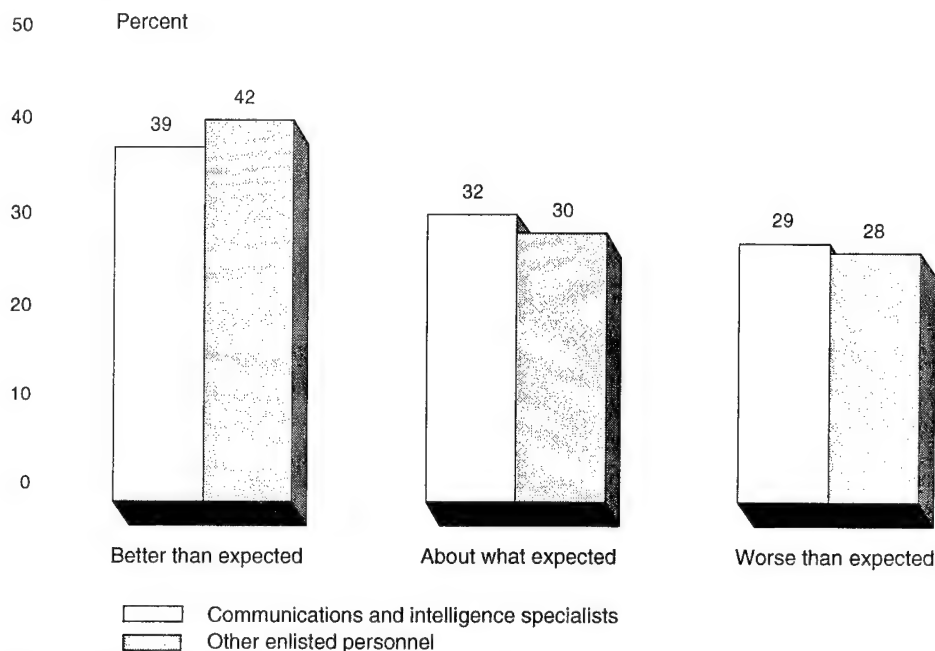
The expectations of those serving in communications and intelligence occupations were similar to those of other enlisted personnel. The survey asked servicemembers to recall what their career intentions were when they first entered the military. The career intent of communications and intelligence personnel when they entered the military was virtually the same as for other enlisted personnel. Figure 18 shows that communications and intelligence personnel were mostly unsure (50 percent), as were other enlisted personnel, about their career intentions when they first joined the military. The remaining personnel were fairly evenly split between those who intended to remain until retirement and those who intended to serve their initial obligation and leave.

**Figure 18: Communications and Intelligence Specialists' Career Intent on Entry**

Source: DOD's 1999 Survey of Active Duty Personnel.

The perceptions of communications and intelligence specialists about how military life compared to the expectations they had when they entered were similar to those of other enlisted personnel (see fig. 19). When asked how military life met the expectations they had when they first joined the military, around 40 percent of both communications and intelligence specialists and other enlisted personnel indicated that life in the military was better than what they expected. About 30 percent indicated military life was about what they expected. Nearly 30 percent indicated military life was worse than expected.

**Figure 19: Communications and Intelligence Specialists' Perceptions of Military Life Compared to Expectations at Entry**



Source: DOD's 1999 Survey of Active Duty Personnel.

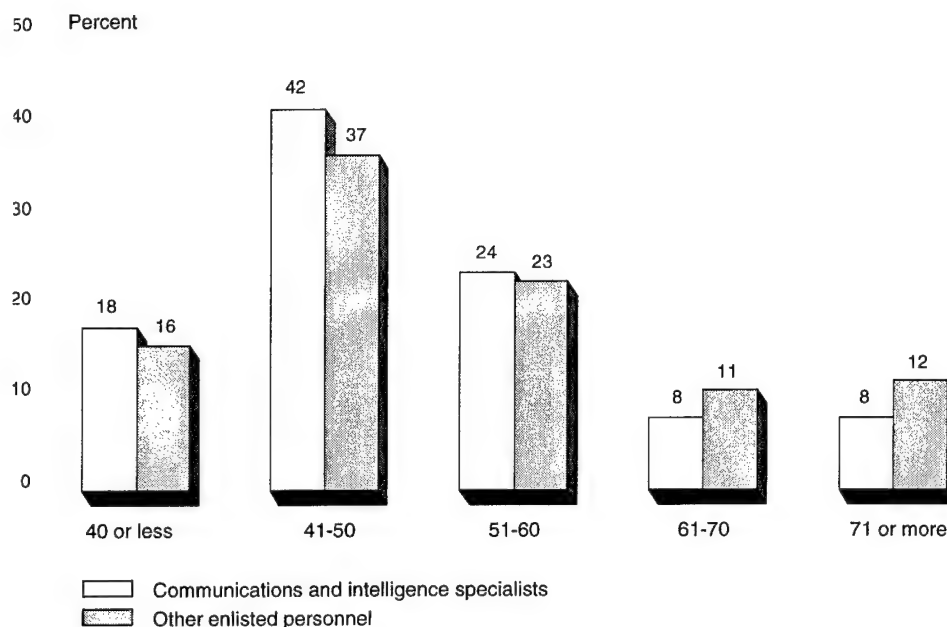
## Experiences

The experiences of communications and intelligence specialists were about the same as other enlisted personnel. They reported working as many hours, being away from home as much, and that their units were as prepared with regard to staffing and parts and equipment as did other enlisted personnel.

## Time at Work and Away from Home

Overall, communications and intelligence specialists and other enlisted personnel reported working long hours. Roughly 45 percent reported working 51 hours or more during their previous workweek. About one-fifth of each group indicated they worked 61 or more during their last full workweek. Significantly fewer communications and intelligence specialists reported working 61 hours or more, compared to other enlisted personnel (see fig. 20).

**Figure 20: Number of Hours Communications and Intelligence Specialists Reported Working During Previous Workweek**

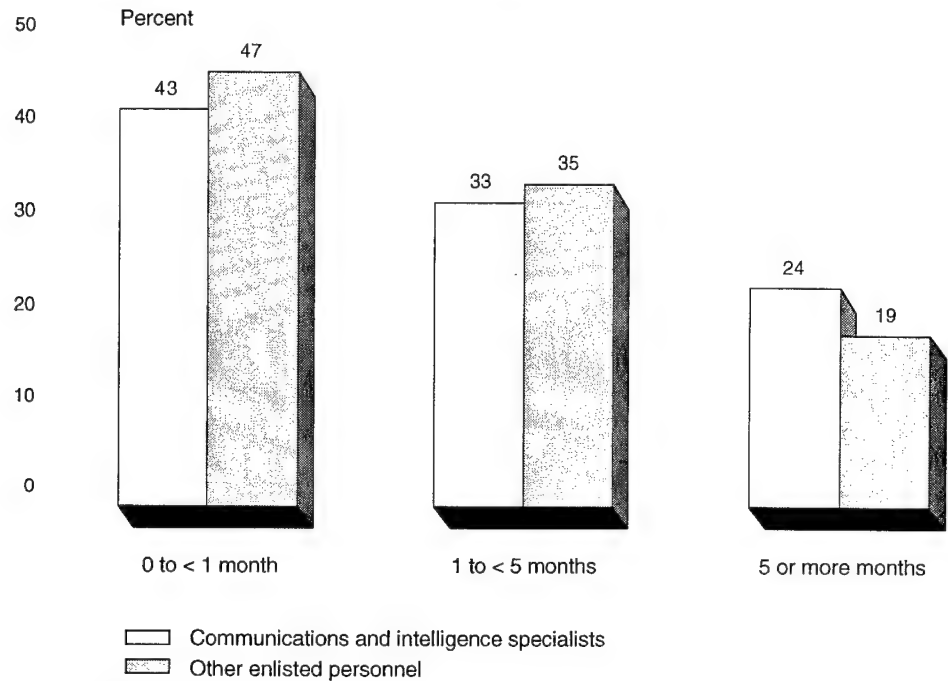


Source: DOD's 1999 Survey of Active Duty Personnel.

Concerns have been raised in recent years that military personnel are away from home excessively. Communications and intelligence specialists reported being away from home as much as other enlisted personnel. About one-quarter of the communications and intelligence specialists and one-fifth of all other enlisted personnel reported being away from home for a total of 5 months or more during the previous year.<sup>2</sup> More than 40 percent of each group reported they had been away for 1 month or less (see fig 21).

<sup>2</sup> Servicemembers were asked to report the total length of time they were away home because of their military duties. To calculate the total length of time away, servicemembers were asked to add up all the nights they were away from their permanent duty station during the previous 12 months.

**Figure 21: Number of Months Communications and Intelligence Specialists Were Away from Home During Previous 12 Months**

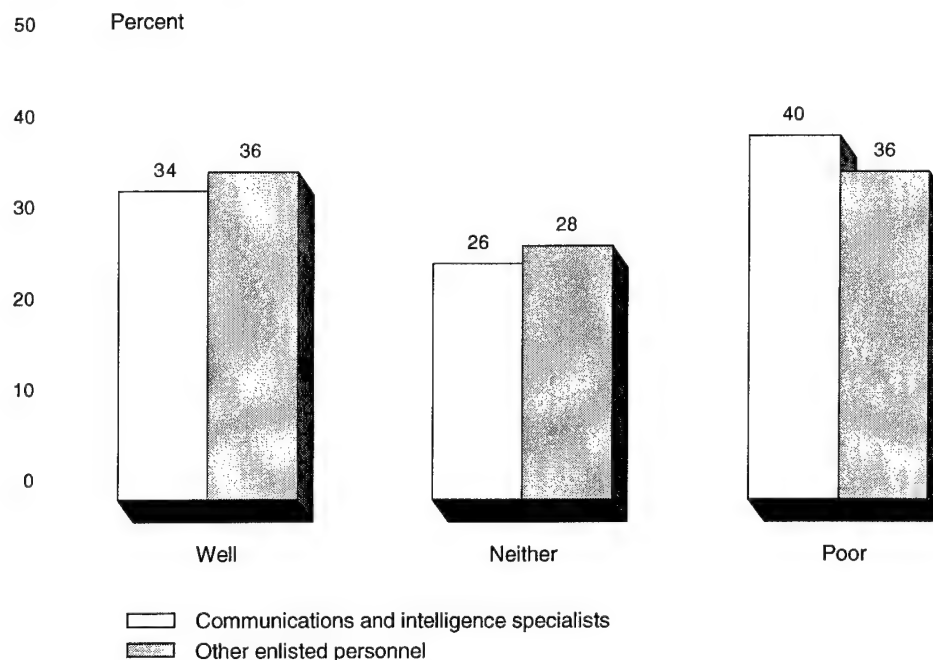


Source: DOD's 1999 Survey of Active Duty Personnel.

## Resource Shortfalls

Concerns about having adequate numbers of personnel were about the same for communications and intelligence personnel as for other enlisted personnel. Forty percent of the communications and intelligence specialists and 36 percent of other enlisted personnel reported their unit's preparation was poor regarding staffing preparedness (see fig. 22).

**Figure 22: Communications and Intelligence Specialists' Perceptions of Unit Staffing Preparedness**

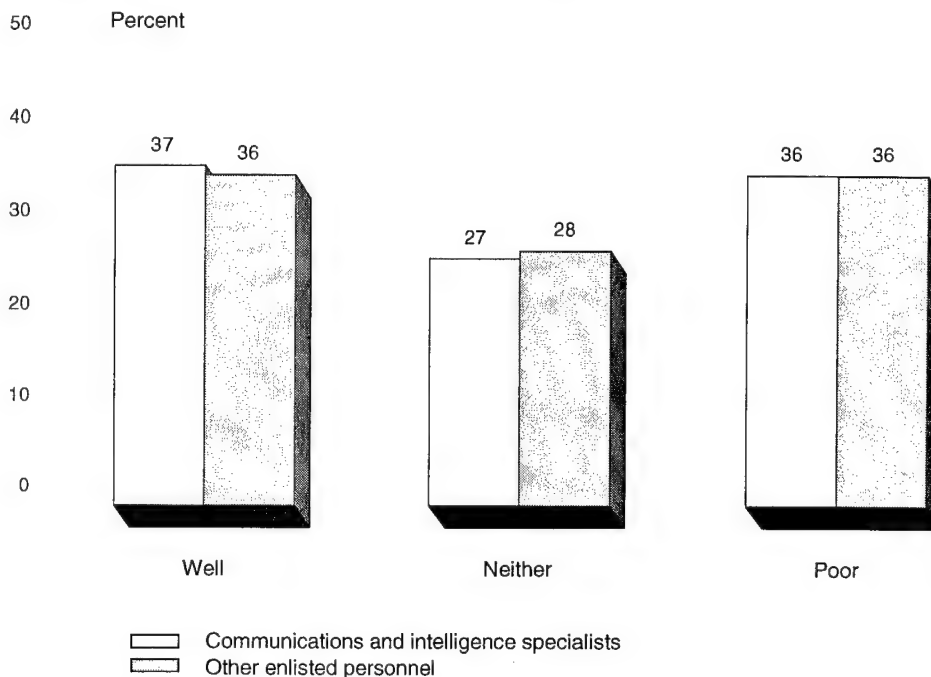


Source: DOD's 1999 Survey of Active Duty Personnel.

Parts and equipment preparedness have also been a major concern during recent years. About one-third (36 percent) of the communications and intelligence personnel and a similar percentage of the other enlisted personnel indicated their unit's parts and equipment preparedness was poor (see fig. 23).



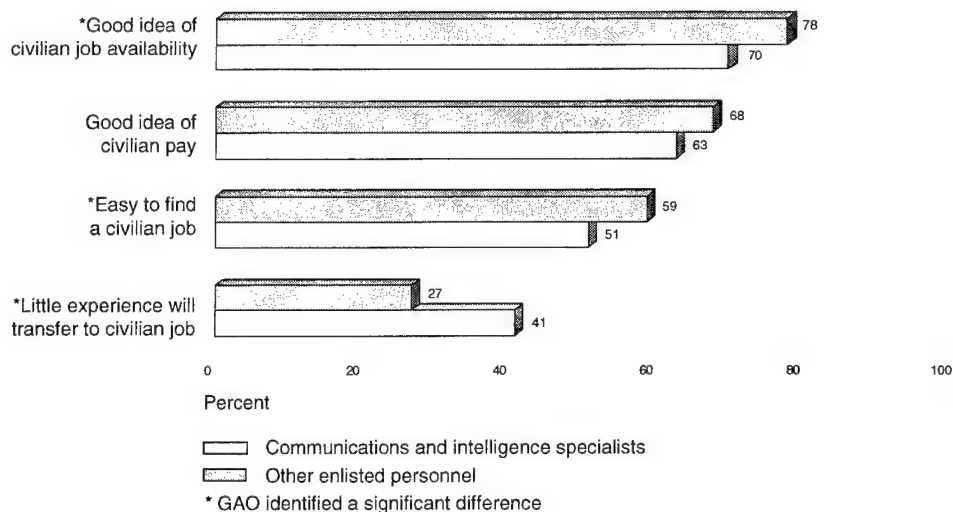
**Figure 23: Communications and Intelligence Specialists' Perceptions of Unit Preparedness With Regard to Parts and Equipment**



Source: DOD's 1999 Survey of Active Duty Personnel.

## Perceptions of Civilian Opportunities

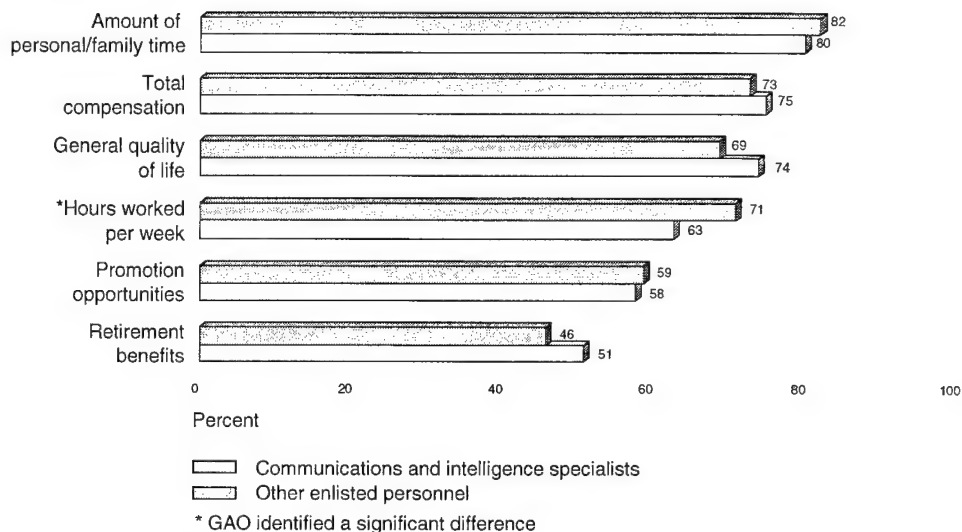
A significantly smaller percentage of communications and intelligence specialists were optimistic about their job prospects in the civilian sector compared to other enlisted personnel (see fig. 24). Fewer indicated they knew what civilian jobs would be available to them, and they were less positive than other enlisted personnel about how easy it would be to find a civilian job. Compared to other enlisted personnel, a smaller proportion thought their skills would transfer easily into a civilian job. This is likely due to the diverse nature of the occupations that comprise this group. From air traffic controllers to sonar operators and intelligence specialists, this occupational area is comprised of a wide variety of occupations, some of which are very specialized and may not have a direct match in the civilian economy. For example, occupations such as radar and sonar operators may not have direct civilian counterparts, thus, making comparisons difficult. Accordingly, it is understandable why perceptions of personnel in this group could be less optimistic compared to those of other enlisted personnel.

**Figure 24: Communications and Intelligence Specialists' Perceptions of Civilian Work Opportunities**

Source: DOD's 1999 Survey of Active Duty Personnel.

Figure 25 shows the areas where enlisted personnel saw civilian life as being better than military life. Communications and intelligence specialists viewed several aspects of civilian life as being better than military life. The amount of personal/family time, total compensation, general quality of life, hours worked per workweek, promotion opportunities and retirement benefits were all seen as being better in the civilian world. The responses of communications and intelligence specialists were generally similar to those of other enlisted personnel. The only significant difference was with regard to the number of hours worked per week. Fewer communications and intelligence specialists thought that the hours worked per week in the civilian world would be better than in the military.

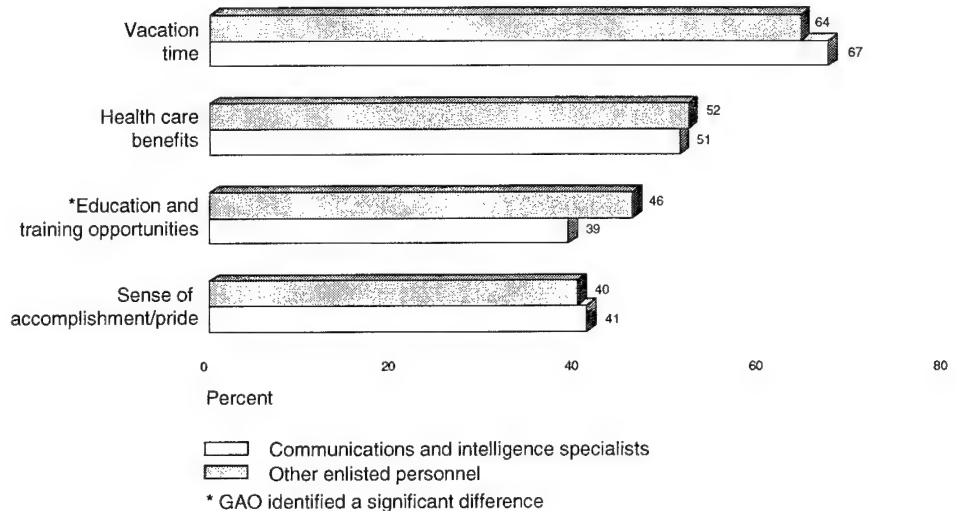
**Figure 25: Communications and Intelligence Specialists' Perceptions of Civilian Life Being Better than Military Life**



Source: DOD's 1999 Survey of Active Duty Personnel.

Figure 26 shows the areas where enlisted personnel saw some aspects of military life as being somewhat better than civilian life. Communications and intelligence specialists viewed several aspects of military life as being better than life in the civilian world. Many indicated that vacation time, health care benefits, education and training opportunities and a sense of accomplishment were somewhat better in the military than they would be in the civilian world. However, the only significant difference between communications and intelligence specialists and other enlisted personnel was with regard to education and training opportunities. Fewer communications and intelligence personnel indicated that education and training opportunities would be better in the military than in the civilian world.

**Figure 26: Communications and Intelligence Specialists' Perceptions of Military Life Being Better than Civilian Life**

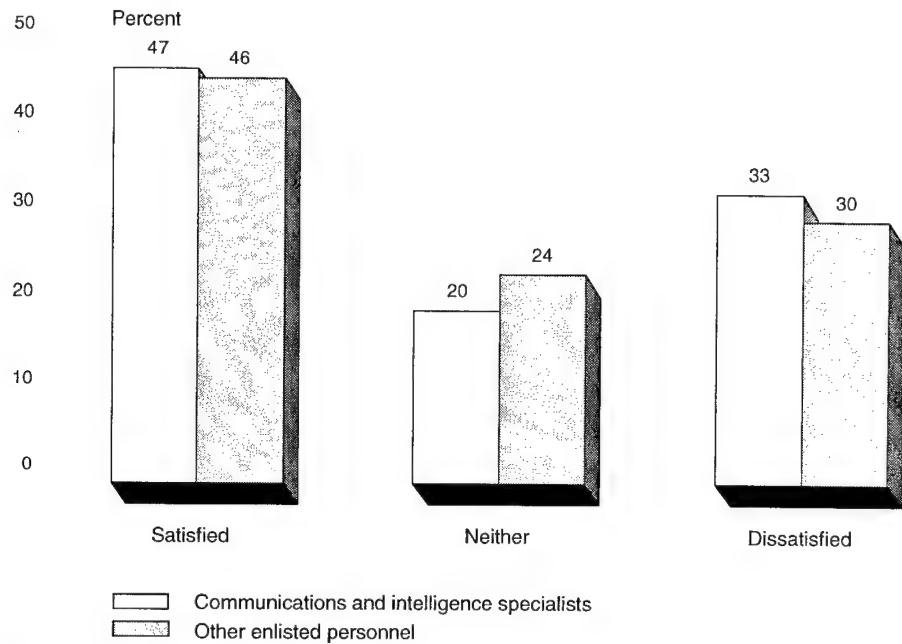


Source: DOD's 1999 Survey of Active Duty Personnel.

## Satisfaction and Career Intentions

The satisfaction and career intentions for those working in communications and intelligence occupations were about the same as for other enlisted personnel. Nearly half (47 percent) of the communications and intelligence specialists were satisfied with the military way of life. On the other hand, one-third (33 percent) were dissatisfied with military life (see fig. 27).

**Figure 27: Communications and Intelligence Specialists' Overall Satisfaction With Military Way of Life**

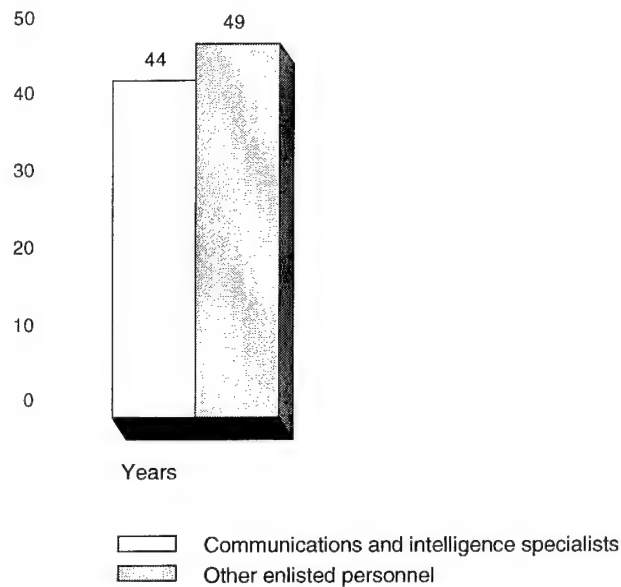


## Retention Intention

Nearly 45 percent of communications and intelligence specialists indicated that they expect to serve 20 years or more before they leave the military. A similar percentage of other enlisted personnel held the same expectation. Figure 28 shows the career intentions of servicemembers based the number of years of military service they believed they would have when they leave or retire from the military.

**Figure 28: Communications and Intelligence Specialists' Career Intent**

Percent expecting to stay in the military for 20 years or more

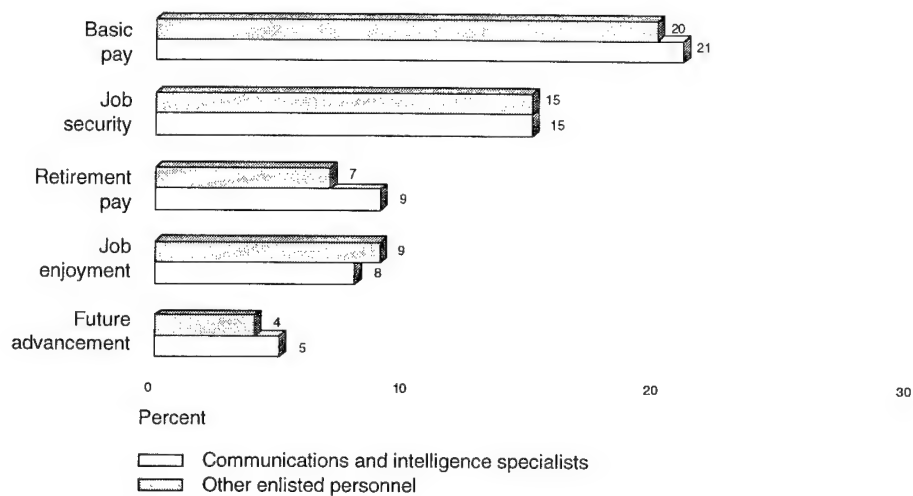


Source: DOD's 1999 Survey of Active Duty Personnel.

## Reasons for Staying and Leaving

Communications and intelligence personnel cited similar reasons for remaining in the military compared to other enlisted personnel. Basic pay, job security, retirement benefits, job enjoyment, and future advancement were cited as top reasons for staying in the military (see fig. 29). As with all other enlisted personnel, basic pay appeared as the top reason for both staying in and for leaving the military. Overall, there were no significant differences between the responses of communications and intelligence specialists and other enlisted personnel.

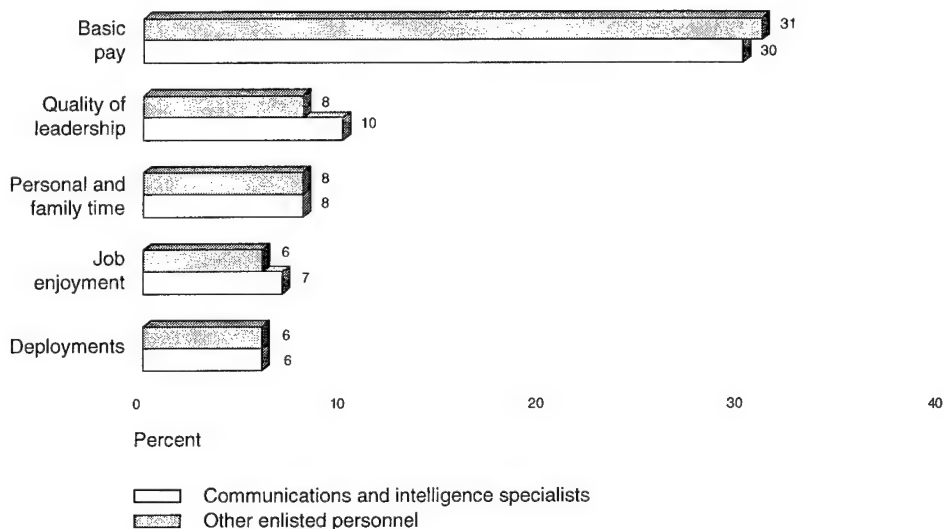
**Figure 29: Communications and Intelligence Specialists' Top Five Reasons for Staying in the Military**



Source: DOD's 1999 Survey of Active Duty Personnel.

For both groups, the top five reasons for leaving the military included basic pay, quality of leadership, amount of personal and family time, job enjoyment, and deployments (see fig. 30). There were no significant differences between the responses of communications and intelligence specialists and other enlisted personnel.

**Figure 30: Communications and Intelligence Specialists' Top Five Reasons for Leaving the Military**



Source: DOD's 1999 Survey of Active Duty Personnel.



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# Appendix V: Electrical and Mechanical Equipment Repairers

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The expectations, experiences and retention intentions of personnel serving in electrical and mechanical equipment repair occupations were generally similar to those of other enlisted personnel. However there were some significant differences. For example, a greater percentage of retention-critical personnel in this occupation area raised preparedness concerns attributed to staffing, and parts and equipment shortfalls compared to other enlisted personnel. More of them were aware of what a civilian job would pay and believed their skills would transfer easily to a civilian job. On the other hand, these personnel were about as likely as other enlisted personnel to plan for a 20-year or more career in the military.

Within the electrical and mechanical equipment repair occupation area, the retention-critical occupations identified by the services fit within five occupation groups.<sup>1</sup> These personnel serve in aircraft and aircraft related repair, automotive repair, wire communications repair, power generating equipment repair, and precision equipment repair occupations. These personnel are responsible for repair and maintenance of electrical, mechanical, hydraulic, and pneumatic equipment.

Table 10 describes each occupation and provides details about the number of survey respondents, including the size of the enlisted population their responses were projected to represent. Some occupation groups are common across all the services, but not all the services identified the same occupation groups as being retention-critical. Our analysis was conducted using only the responses of personnel whose occupation groups were identified by their service as retention-critical. Personnel that work within the same occupation group, but whose service did not identify that group as retention-critical were excluded from our analysis. The occupations described in table 10 are only those that each service identified as retention-critical.

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<sup>1</sup> The electrical and mechanical equipment repair occupation area is comprised of nine occupational groups: aircraft and aircraft related repair, automotive repair, wire communications repair, missile mechanical and electrical repair, armament and munitions, shipboard propulsion, power generating equipment, precision equipment, and other mechanical and electrical equipment repairers.

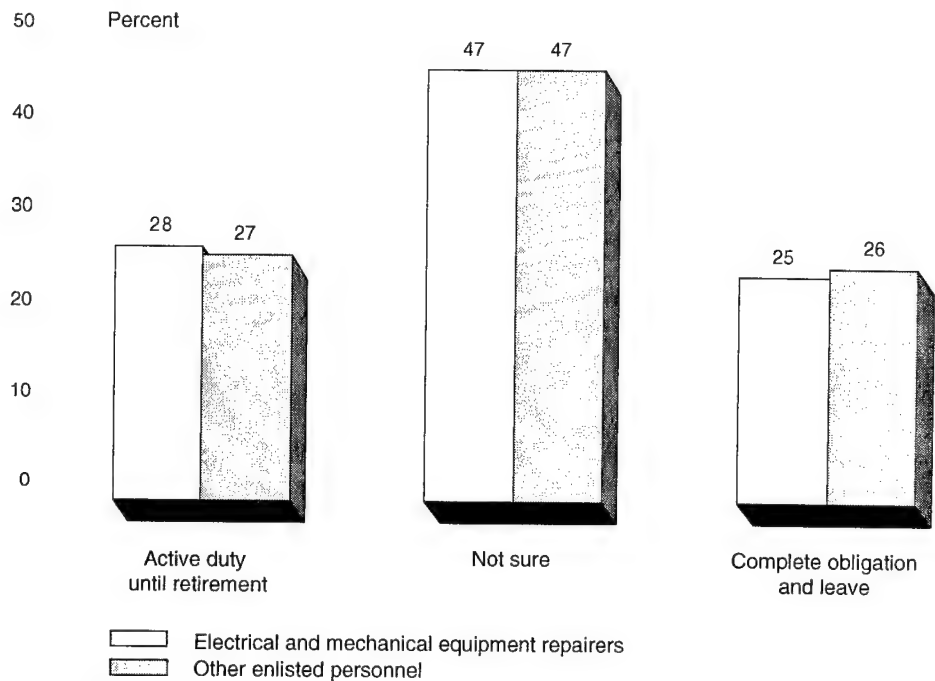
Table 10: Description of Retention-Critical Electrical and Mechanical Equipment Repair Occupational Groups

Occupation group	Service	Number of respondents	Projected population	Occupation description
E60	Army	153	10,502	Repairs aircraft engines, electrical systems, structural components and surfaces, and launch equipment.
Aircraft and aircraft related repairers	Air Force	578	41,911	
	Marines	127	8,071	
	Navy	346	29,075	
		1,204	89,559	
E61	Army	380	26,926	Repairs construction equipment and other wheeled and tracked vehicles.
Automotive repairers		380	26,926	
E62	Navy	29	2,612	Repairs and specializes in the installation and maintenance of telephones, switchboards, and central office and related interior communications equipment.
Wire communications repairers		29	2,612	
E66	Air Force	26	1,536	Repairs nuclear power reactors and primary electric generating plants.
Power generating equipment repairers	Navy	198	14,792	
		224	16,328	
E67	Navy	10	892	Repairs optical and other precision instruments and office machines.
Precision equipment repairers		10	892	
<b>Total</b>		<b>1,847</b>	<b>136,317</b>	

Source: DOD.

## Expectations

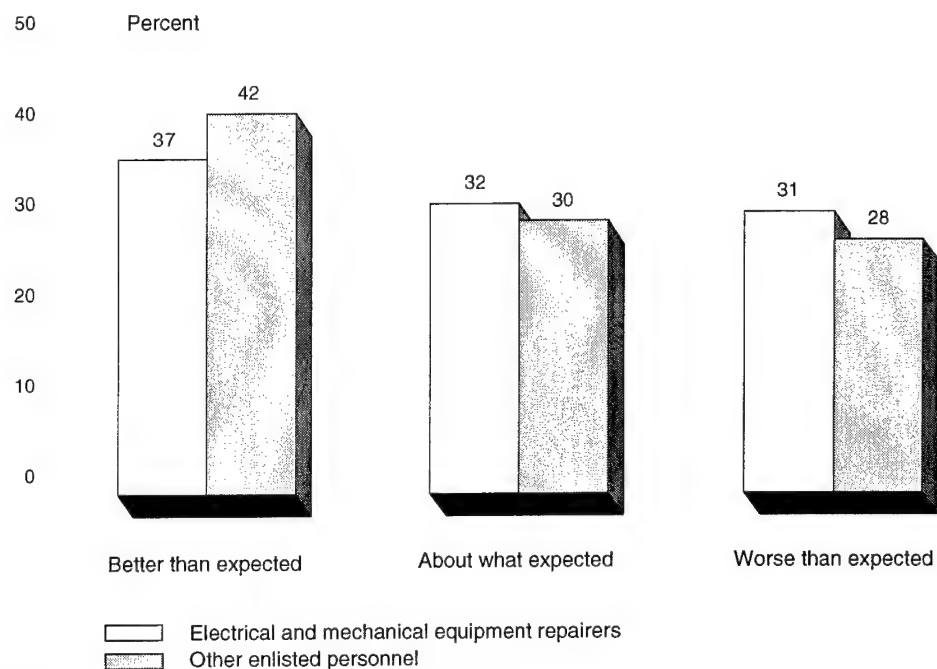
The survey asked servicemembers to recall what their career intentions were when they first entered the military. The career intent of electrical and mechanical equipment repairers when they first entered the military was virtually the same as for other enlisted personnel (see fig. 31). As with other enlisted personnel, electrical and mechanical equipment repairers were mostly unsure (47 percent) about their career intentions when they first joined the military. The remaining survey respondents were evenly split between those who intended to remain until retirement and those who intended to serve their initial obligation and leave.

**Figure 31: Electrical and Mechanical Equipment Repairers' Career Intent on Entry**

Source: DOD's 1999 Survey of Active Duty Personnel.

The survey responses of electrical and mechanical equipment repair personnel were generally similar to those of other enlisted personnel with regard to their perceptions of military life at entry (see fig. 32). When asked how military life had met the expectations they had when they first joined, around 40 percent of both electrical and mechanical equipment repairers and other enlisted personnel indicated military life was better than expected. About 30 percent indicated that military life was about what they expected. Roughly 30 percent indicated military life was worse than expected.

**Figure 32: Electrical and Mechanical Equipment Repairers' Perceptions of Military Life Compared to Expectations at Entry**



Source: DOD's 1999 Survey of Active Duty Personnel.

## Experiences

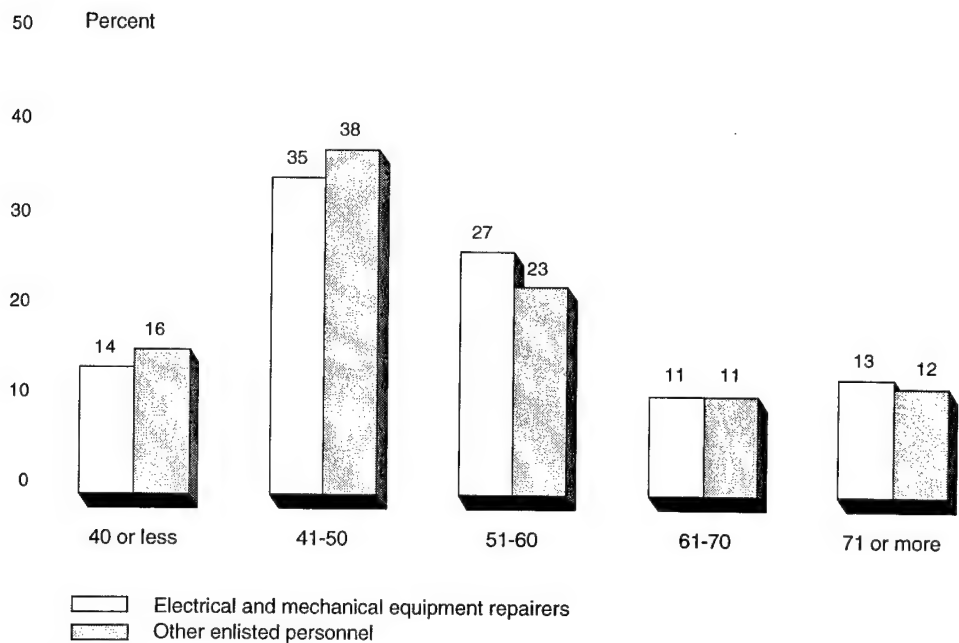
Overall, the experiences of those personnel serving in electrical and mechanical equipment repair occupations were mixed. They worked about the same number of hours and were away from home about as much as other enlisted personnel; however, a higher percentage of electrical and mechanical equipment repair personnel indicated preparedness concerns regarding both staffing and parts and equipment, compared to other enlisted personnel. In both areas, nearly 50 percent of the electrical and mechanical equipment repairers reported that their units were poorly prepared.

## Time at Work and Away from Home

Figure 33 shows how many hours electrical and mechanical equipment repairers and other enlisted personnel reported working during their last full workweek before filling out the survey. Over 50 percent reported working 51 hours or more during their previous workweek. They also raised more staffing and parts and equipment concerns than other enlisted personnel (see figs. 35 and 36). However, these problems do not appear to

have affected the number of hours they worked compared to other enlisted personnel. About one-fourth of each group indicated they worked 61 hours or more during their last full workweek (see fig. 33).

**Figure 33: Number of Hours Electrical and Mechanical Equipment Repairers' Reported Working During Previous Workweek**

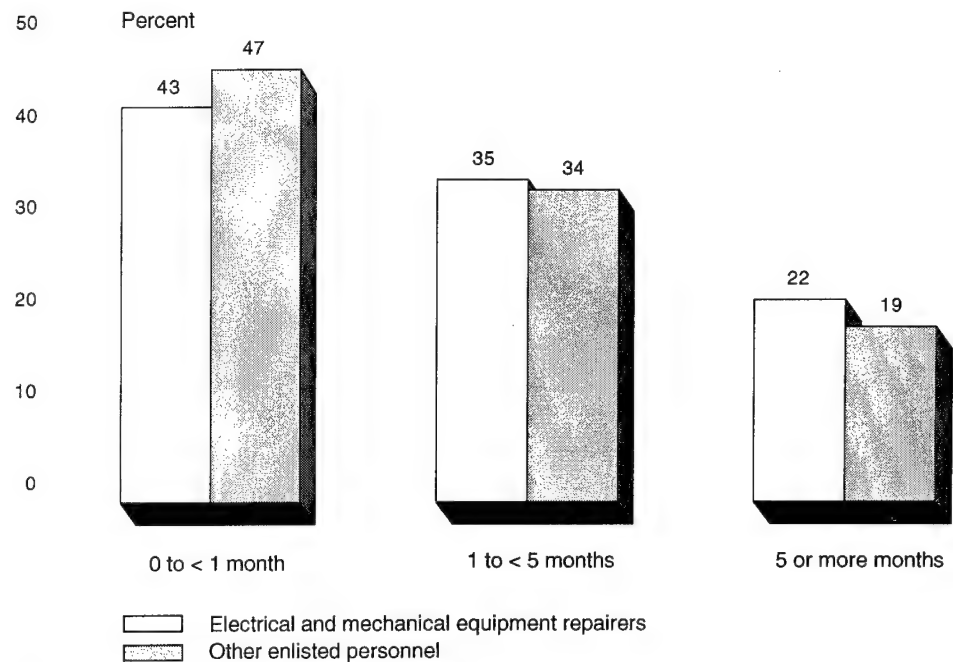


Source: DOD's 1999 Survey of Active Duty Personnel.

Concerns have been raised in recent years that military personnel are away from home excessively. Electrical and mechanical equipment repair personnel reported being away from home at roughly the same rate as other enlisted personnel. Overall, about one-fifth of both electrical and mechanical equipment repair personnel (22 percent) and other enlisted personnel (19 percent) reported being away from home for a total of 5 months or more during the previous year.<sup>2</sup> Nearly half reported they had been away for 1 month or less. Figure 34 shows the total number of months that servicemembers reported being away from home during the previous 12 months.

<sup>2</sup> Servicemembers were asked to report the total length of time away from home because of their military duties. To calculate the total length of time away, they were asked to add up all the nights away from their permanent duty station during the previous 12 months.

**Figure 34: Number of Months Electrical and Mechanical Equipment Repairers Were Away from Home During Previous 12 Months**

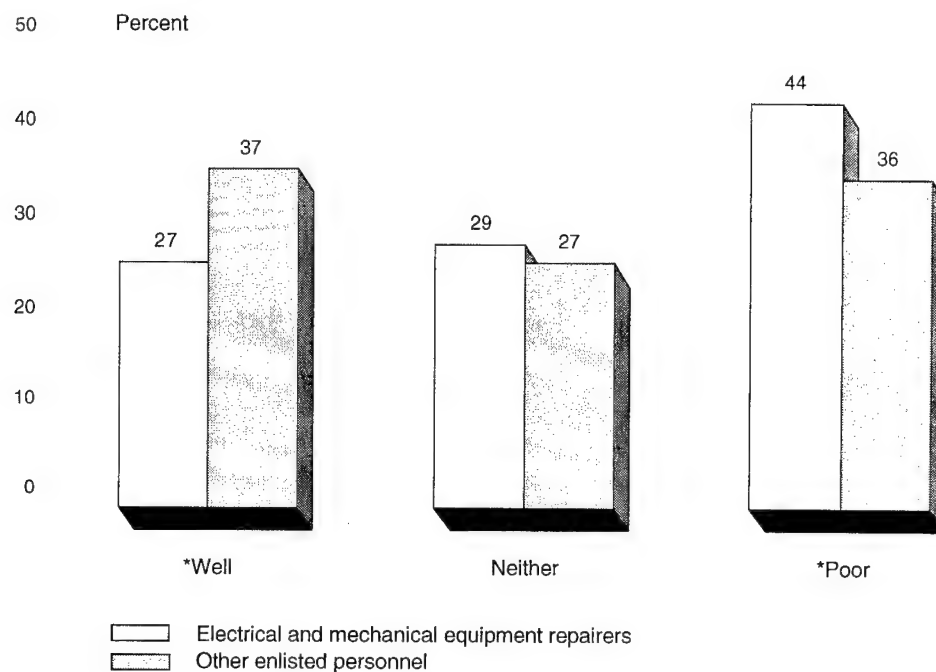


Source: DOD's 1999 Survey of Active Duty Personnel.

## Resource Shortfalls

Compared to other enlisted personnel, a greater percentage of electrical and mechanical equipment repairers raised concerns about staffing preparedness. Nearly 45 percent of the electrical and mechanical equipment repairers indicated their unit's preparedness was poor regarding how they were staffed compared to 36 percent for other enlisted personnel (see fig. 35).

**Figure 35: Electrical and Mechanical Equipment Repairers' Perceptions of Unit Staffing Preparedness**

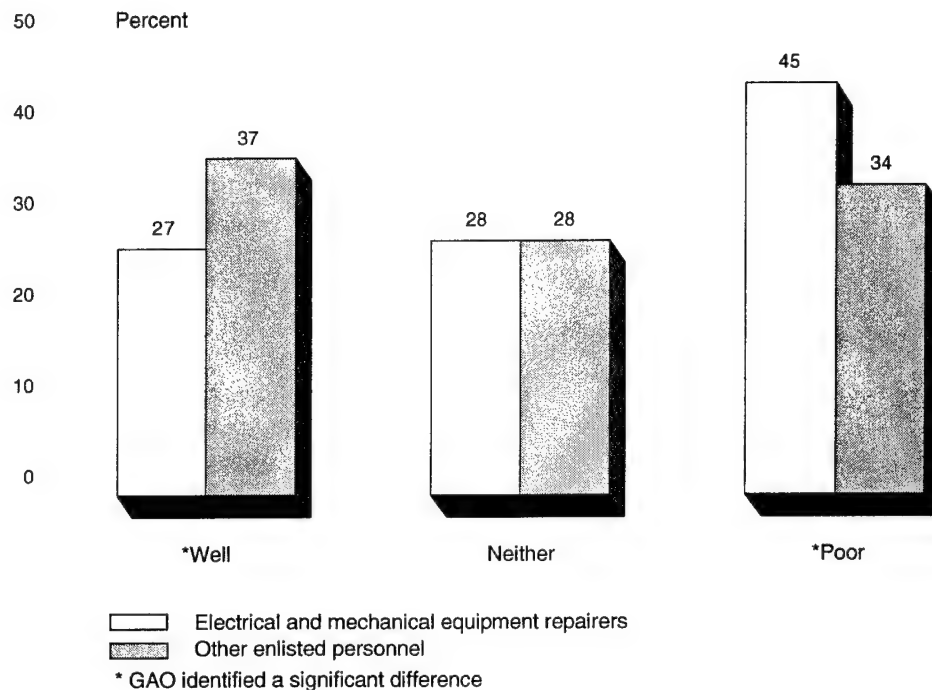


\* GAO identified a significant difference

Source: DOD's 1999 Survey of Active Duty Personnel.

Parts and equipment preparedness has been a major concern during recent years. Figure 36 shows that a greater percentage of electrical and mechanical equipment repair personnel (45 percent) rated their unit's parts and equipment preparedness as poor compared to other enlisted personnel (34 percent).

**Figure 36: Electrical and Mechanical Equipment Repairers' Perceptions of Unit Parts and Equipment Preparedness**



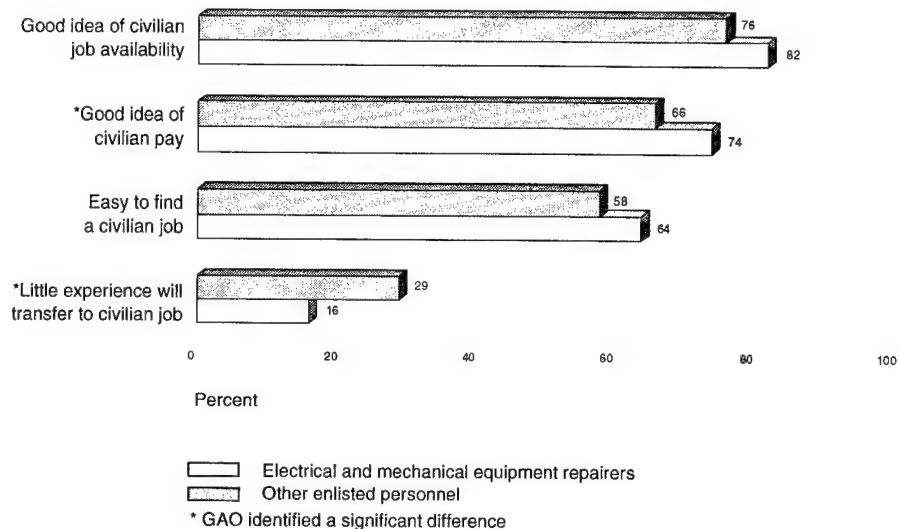
Source: DOD's 1999 Survey of Active Duty Personnel.

## Perceptions of Civilian Opportunities

Electrical and mechanical equipment repairers were generally as optimistic about their job prospects in the civilian sector as were other enlisted personnel (see fig. 37). However, compared to other enlisted personnel, a higher percentage of electrical and mechanical equipment repairers believed they knew what a civilian job would pay and that their experience would transfer easily into a civilian job.



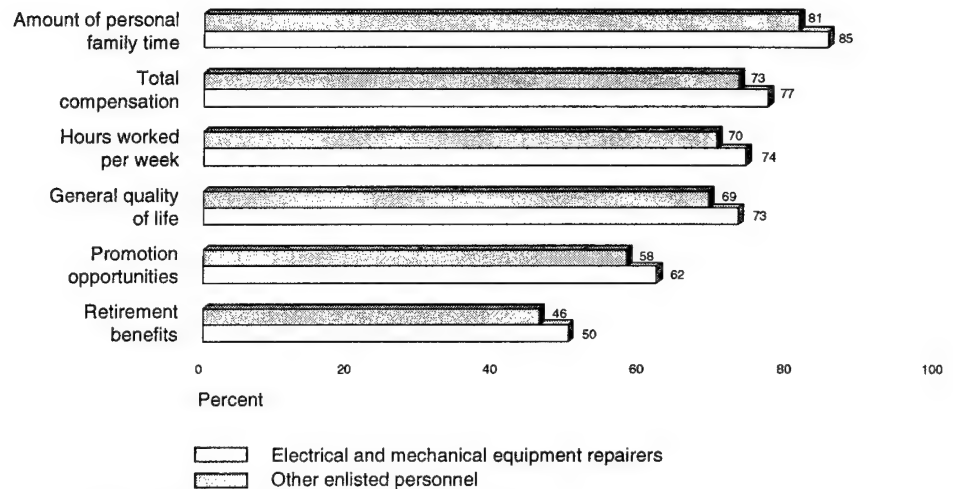
**Figure 37: Electrical and Mechanical Equipment Repairers' Perceptions of Civilian Work Opportunities**



Source: DOD's 1999 Survey of Active Duty Personnel.

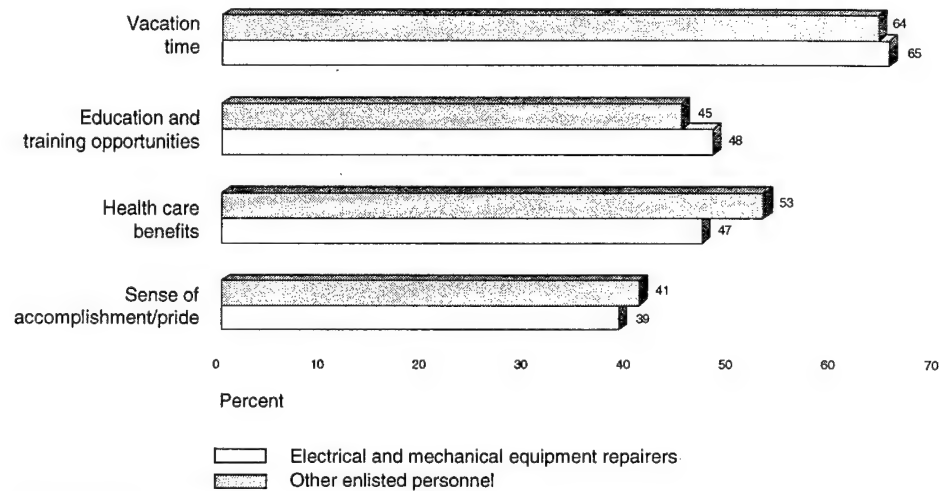
Figure 38 shows the areas where electrical and mechanical equipment repairers saw civilian life as being better than military life. Overall, they were similar to other enlisted personnel regarding the aspects of civilian life they viewed as being better than military life.

**Figure 38: Electrical and Mechanical Equipment Repairers' Perceptions of Civilian Life Being Better than Military Life**



Source: DOD's 1999 Survey of Active Duty Personnel.

Figure 39 shows the areas where electrical and mechanical equipment repairers viewed military life as being better than civilian life. There were no significant differences between the responses of electrical and mechanical equipment repairers and other enlisted personnel regarding the areas of military life that were seen as better than civilian life.

**Figure 39: Electrical and Mechanical Equipment Repairers' Perceptions of Military Life Being Better than Civilian Life**

Source: DOD's 1999 Survey of Active Duty Personnel.

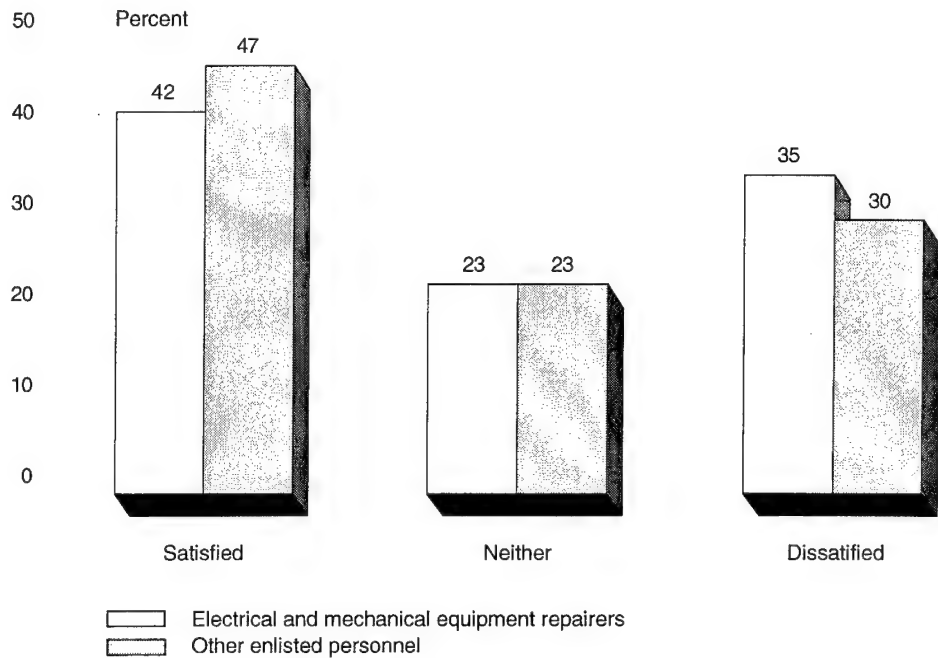
## Occupational outlook

Electrical and mechanical equipment repairers were about as optimistic as other enlisted personnel with regard to their civilian job prospects. Civilian opportunities for two of the occupations that comprise this occupational area are projected to be good over the next several years. Civilian aircraft and automotive mechanic occupations are both projected to grow between 10 and 20 percent. The optimism of retention-critical aircraft mechanics may be tempered somewhat by the recent economic downturn since, according to the Bureau for Labor Statistics, aircraft mechanics can be vulnerable to layoffs during times of recession. Civilian mechanical repair occupations will likely do well regardless of an economic downturn. The Bureau for Labor Statistics projects that there will be more job openings for civilian automotive mechanics and service technicians than for most other occupations.

## Satisfaction and Career Intentions

The satisfaction and career intentions of those serving in electrical and mechanical equipment repair occupations were about the same as those of other enlisted personnel. Their satisfaction with the military way of life was about the same as reported by other enlisted personnel. For both groups, over 40 percent indicated they were satisfied with the military way of life and about one-third indicated they were dissatisfied (see fig. 40).

**Figure 40: Electrical and Mechanical Equipment Repairers' Overall Satisfaction with Military Way of Life**

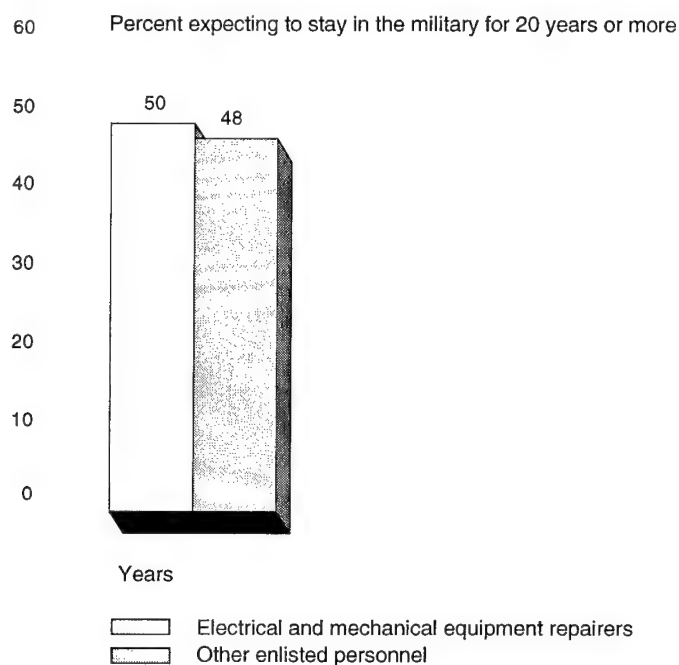


Source: DOD's 1999 Survey of Active Duty Personnel.

## Retention Intention

Half of the electrical and mechanical equipment repairers and about half of the other enlisted personnel indicated they expect to serve 20 years or more in the military before they leave. Figure 41 shows the career intentions of servicemembers based upon the number of years of service they believed they would have when they leave military service.

**Figure 41: Electrical and Mechanical Equipment Repairers' Career Intent**

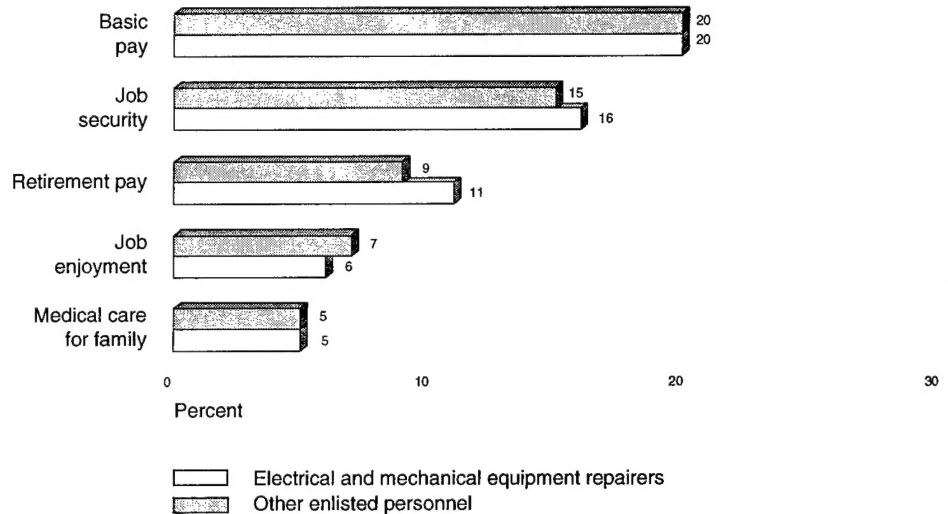


Source: DOD's 1999 Survey of Active Duty Personnel.

## Reasons for staying and leaving

Electrical and mechanical equipment repair personnel cited similar reasons for remaining in the military compared to other enlisted personnel. Basic pay, job security, retirement benefits, job enjoyment, and medical care for their family were cited as top reasons for staying in the military (see fig. 42). As with other enlisted personnel, basic pay appeared as the top reason for both staying in and for leaving the military. Overall, there were no significant differences between the responses of electrical and mechanical equipment repairers and other enlisted personnel in the five categories measured.

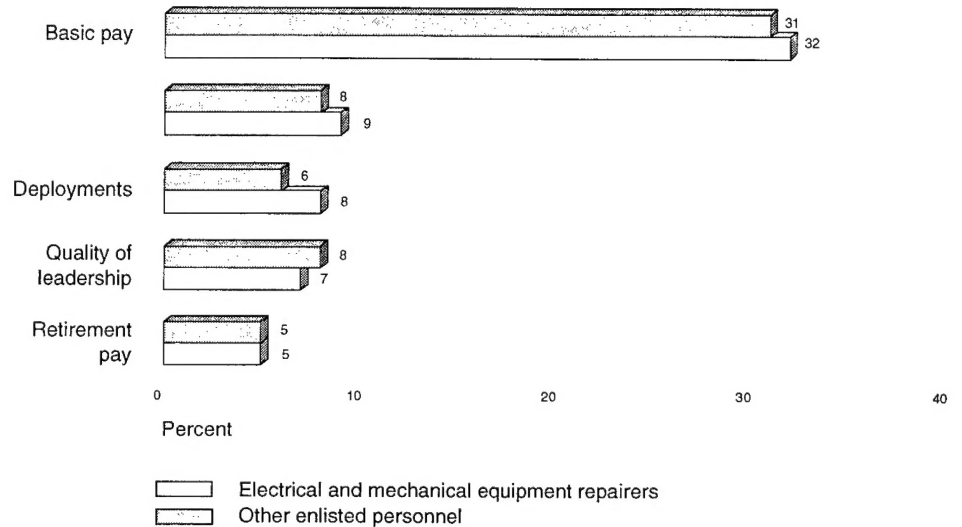
**Figure 42: Electrical and Mechanical Equipment Repairers' Top Five Reasons for Staying in the Military**



Source: DOD's 1999 Survey of Active Duty Personnel.

Electrical and mechanical equipment repair personnel and other enlisted personnel cited similar reasons for leaving the military. The top five reasons for leaving the military included basic pay, amount of personal and family time, deployments, quality of leadership, and amount of retirement pay (see fig. 43). There were no significant differences between the responses of electrical and mechanical equipment repairers and other enlisted personnel.

**Figure 43: Electrical and Mechanical Equipment Repairers' Top Five Reasons for Leaving the Military**



Source: DOD's 1999 Survey of Active Duty Personnel.

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# Appendix VI: Contacts and Staff Acknowledgements

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## GAO Contacts

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## Acknowledgements

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